9500
Communications Server

User Manual — Part Two

February 2, 2005 **Part No. 8000008.B**

ISO 9001 Certified
Quality Management System

PSION TEKLOGIX

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APPENDIX A

PORTS, PINOUTS AND CABLE DIAGRAMS

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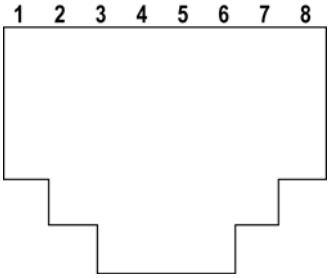
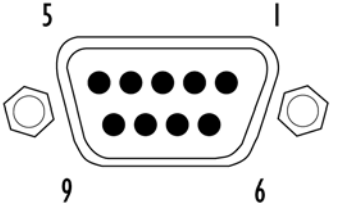
A.1 RJ-45 Connector Pinout



Pin	Signal
1	TD+
2	TD–
3	RD+
4	Not used
5	Not used
6	RD–
7	Not used
8	Not used

Note: *Usually, a straight-through connection is needed to connect Twisted-Pair (10-BaseT) to the hub. In some situations, a cable that crosses TD and RD may be needed (for example, when connecting together two network controllers).*

A.2 Serial Connector Pinout (9-pin)



End view of female connector on cable

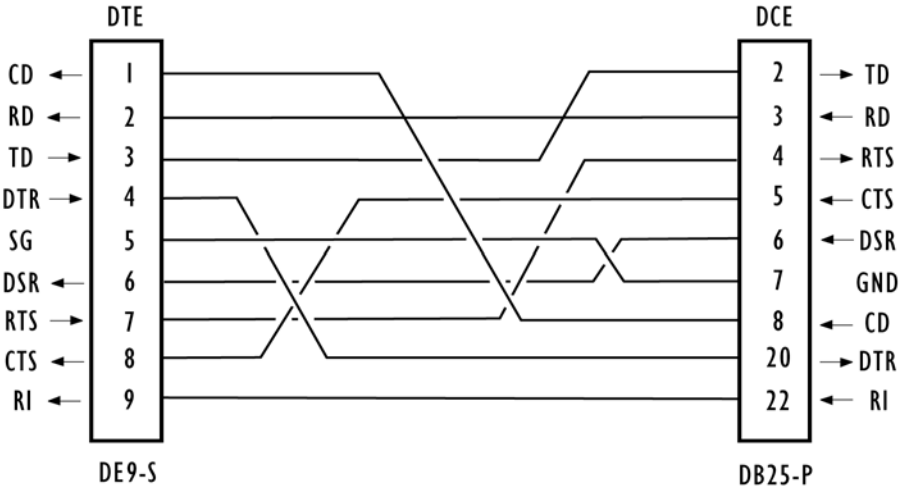
Pin	RS-232 Signal
1	CD (Carrier Detect)
2	RD (Receive Data)
3	TD (Transmit Data)
4	DTR (Data Terminal Ready)
5	SG (Signal Ground)
6	DSR (Data Set Ready)
7	RTS (Ready To Send)
8	CTS (Clear To Send)
9	RI (Ring Indicator)

A.3 Cable Descriptions

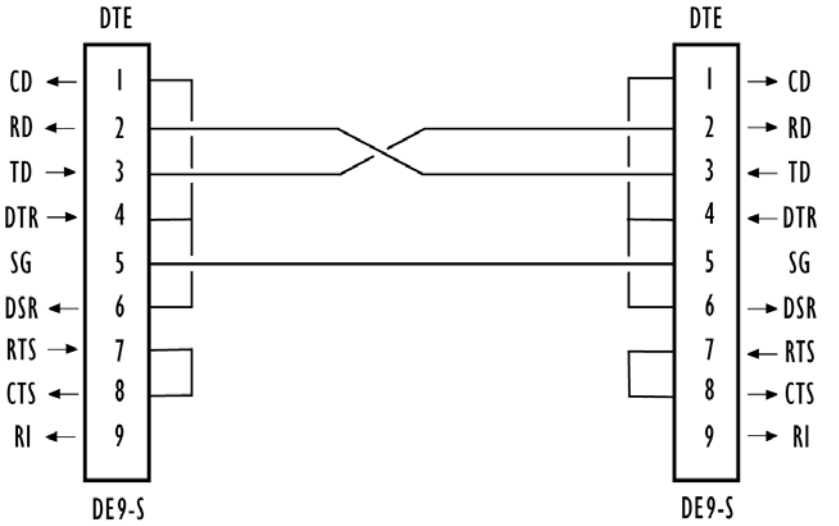
Psion Teklogix Part Number	Protocol	Cable Type	Connector	Communication Mode
19680	RS-232	modem (DTE to DCE)	9-pin to 25-pin	Asynchronous
19687	RS-232	null-modem (DTE to DTE)	9-pin to 9-pin	Asynchronous
3002186	RS-232	null-modem (DTE to DTE)	9-pin to 9-pin	Asynchronous

Note: *Cable 3002186 is necessary for a local serial PPP connection to the 9500 Communications Server hardware. It passes the DTR and DSR signals, which Windows RAS Server requires.*

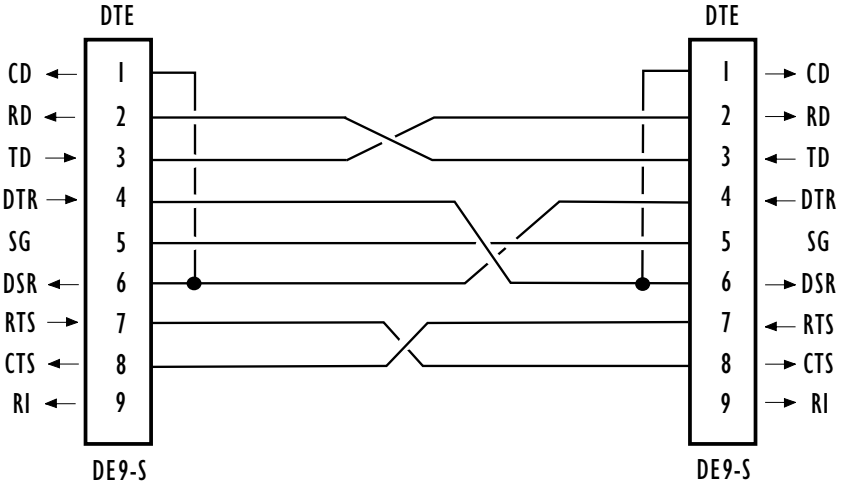
DTE-DCE (Modem) Cable for 9400 (P.N. 19680)



DTE-DTE (Null-Modem) Cable for 9400 (P.N. 19687)



DTE-DTE (Null-Modem) Cable for 9500 (P.N. 3002186)



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SETTING TERMINAL NUMBERS ON THE COMMSERVER

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B.1 Introduction

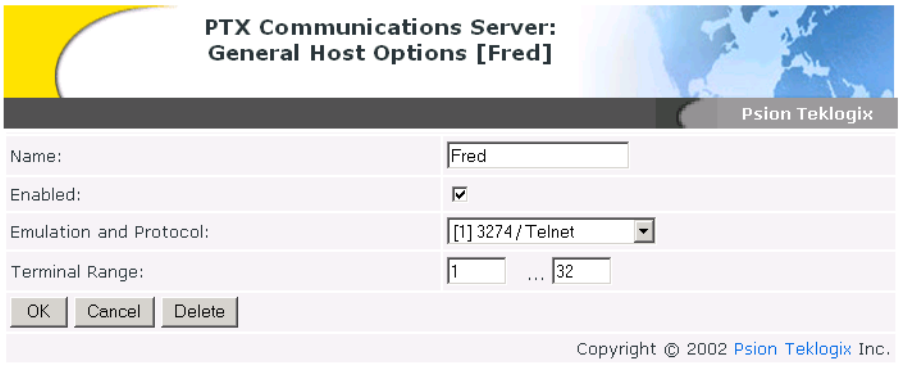
Note: *Unless stated otherwise, the information given in this appendix applies to* ***both TESS and ANSI hosts****.*

Several screens in the 9500 CommServer's configuration interface allow you to specify ranges of terminal numbers:

- The *General Host Options* screen.
- The *Configure Existing Base Station* screen.

The terminal-numbering parameters on these screens interact to determine how terminals connect to hosts in the Psion Teklogix system.

B.1.1 The General Host Options Screen

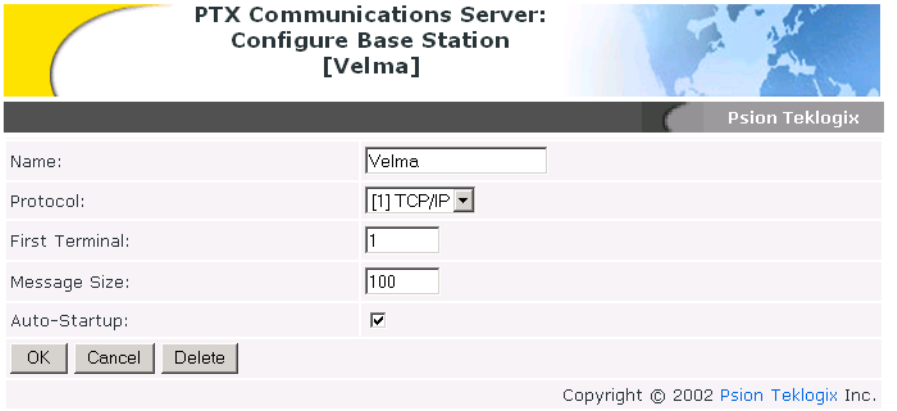


The *General Host Options* screen contains the Terminal Range parameter for the host. It varies slightly depending on the name of the host. To obtain this screen:

1. Select the desired host from the Hosts listbox on the CommServer's *Configuration Main Menu*.
2. Press the *Configure* button next to the Hosts listbox. The CommServer displays the *Host Menu*.
3. Press the *Configure* button next to General Options on the *Host Menu*. The CommServer displays the *General Host Options* screen.

See "General Host Options" on page C-23 for more information about this screen.

B.1.2 The Configure Existing Base Station Screen



The *Configure Existing Base Station* screen contains the First Terminal parameter for the base station. To obtain this screen:

1. Select the desired base station from the Base Stations listbox on the CommServer's *Configuration Main Menu*.
2. Press the *Configure* button next to the Base Stations listbox. The CommServer displays the *Base Station Menu*.
3. Press the *Configure* button next to General Options on the *Base Station Menu*. The CommServer displays the *Configure Existing Base Station* screen.

See "General Options" on page C-136 for more information about this screen.

B.2 Setting The Terminal Range (Hosts)

The *Terminal Range* in each *General Host Options* screen represents host emulation numbers. It maps terminal numbers on the host to the host emulations on the 9500 CommServer. A range of ***n*** terminals ("host emulations") in the host screen matches the ***lower number*** in the range to the ***first terminal defined on this host*** and the ***higher number*** in the range to the ***nth terminal defined on this host***.

When the range starts at 1, the host terminal number is identical to the host emulation number (in other words – the offset is equal to zero). When the range starts with a number other than 1, an offset is created (equal to the lower number minus 1). For instance, the range "10 to 20" sets an offset of 9, and matches the first terminal on this host to host emulation #10.

The examples in this chapter demonstrate the effect of such offsets.

Note: *In the following examples, no offsets were defined in the Base Station screens (base-station offsets are explained in Section B.3 on page 9). Thus, in these examples, the terminal ID numbers match the host emulation numbers.*

B.2.1 Systems With One Host

If the 9500 CommServer is configured for one host, the range of terminals defined in the "Host 1" screen will be ***1 to n***, where ***n*** is the total number of terminals ("host emulations") defined in the main Configuration screen. *Thus, the offset is zero for systems with only one host,* and the ID numbers of the RF terminals are identical to the host emulation numbers.

Example:

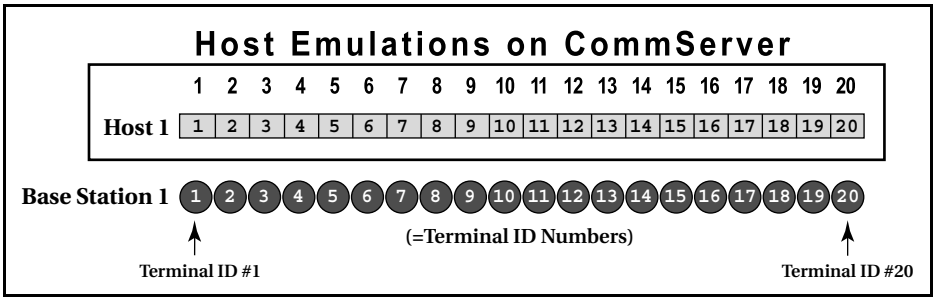


Figure B.1

In this system, we will define the ranges:

In the *General Host Options* screen for Host 1:
Terminal Range = 1 to 20

since this range starts at "1", the offset for this host is zero, and the RF terminal ID numbers will be identical to the host emulation numbers

In the *Configure Existing Base Station* screen for Base Station 1:
First Terminal = 1 no offset on the Base Station

B.2.2 Systems With Multiple Hosts

Terminal number mapping (offsets) become useful when the 9500 CommServer is configured for multiple hosts, and there is a need to differentiate between terminals that communicate with one host and those that communicate with another.

The ranges defined for the hosts can either *overlap* or be *mutually exclusive*, depending on the desired result.

Important: ***YOU CANNOT OVERLAP AN ANSI HOST WITH ANOTHER ANSI HOST OR WITH A TESS HOST!***

Examples:

Two hosts with no overlap in terminal numbers

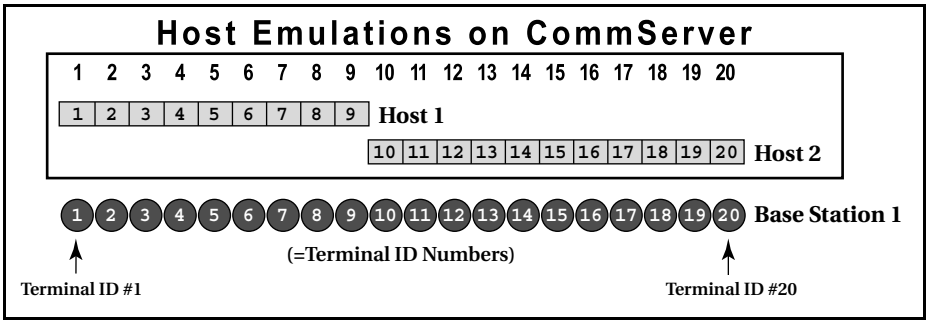


Figure B.2

In this system, we will define the ranges:

In the CommServer's *General Host Options* screen for Host 1:
Terminals = 1 to 9 a range of **9 terminals** (or "host emulations") for Host #1. Since this range starts at "1", the offset for this host is zero

In the CommServer's *Configure Existing Base Station* screen for Base Station 1:
First Terminal = 1 no offset on the Base Station.

In our diagram, we align the first terminal on Host 1 with host emulation #1:

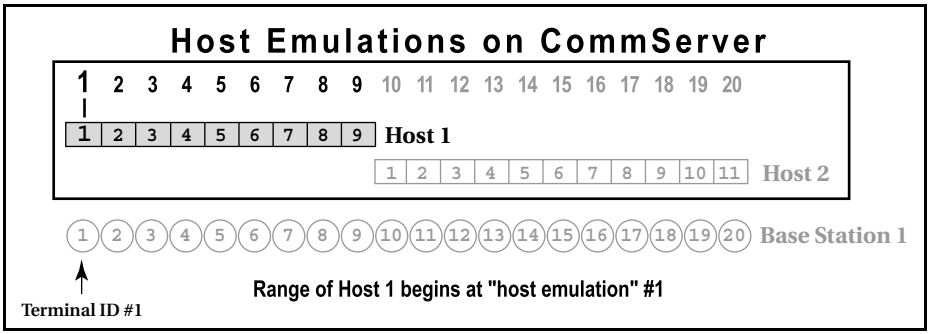


Figure B.3

In the CommServer's *General Host Options* screen for Host 2:
Terminal Range = 10 to 20

a range of **11 terminals** (or "host emulations"). The ***lower number*** in the range – host emulation #10 in this case – is mapped to the ***first*** terminal on Host #2, and the higher number – host emulation #20 in this case – is mapped to the ***11th*** terminal on Host #2

In our diagram, we align the first terminal on Host 2 with host emulation #10:

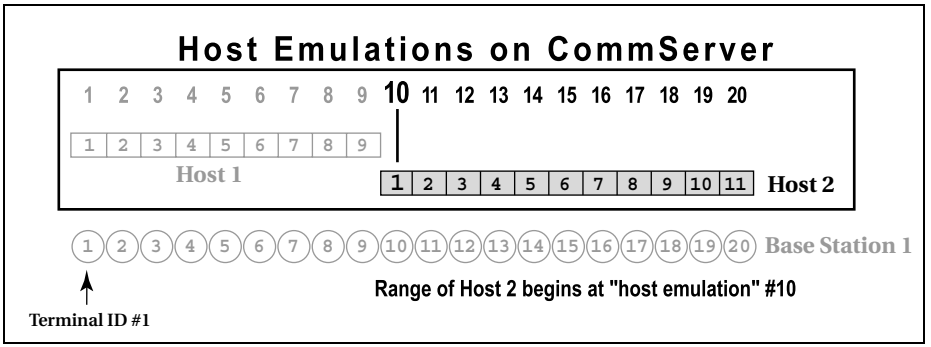


Figure B.4

If, for instance, you assign the ID number of 13 to an RF terminal, it would correspond to the 4th terminal on Host #2.

In this example, no RF terminals fall within the ranges of both Host 1 and Host 2**.** Thus, *no RF terminal can communicate with both hosts*.

Note: *If one host is a TESS host and the other an ANSI host, the terminal parameters will have to be set so that the "ANSI" terminal number indeed falls within the range defined on the 9500 CommServer for the ANSI host, and the "TESS" terminal number within the range defined on the CommServer for the TESS host (refer to the appropriate terminal user manuals for information about how to set these parameters).*

Two hosts with overlap in terminal numbers

Important: ***YOU CANNOT OVERLAP AN ANSI HOST WITH EITHER ANOTHER ANSI HOST OR WITH A TESS HOST!***
All examples with overlapping host terminal ranges assume both hosts to be ***TESS*** *hosts.*

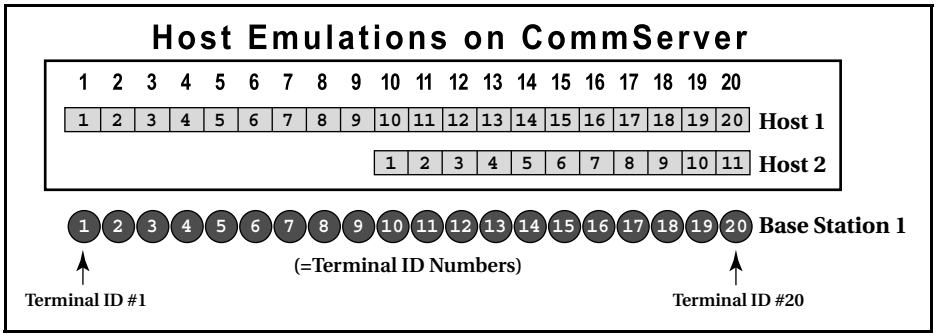


Figure B.5

In this system, we will define the ranges:

In the *General Host Options* screen for Host 1:
Terminal Range = 1 to 20
a range of **20 terminals** (or "host emulations"). Since this range starts at "1", the offset for this host is zero

In the *General Host Options* screen for Host 2:
Terminal Range = 10 to 20
range of **11 terminals** (or "host emulations"). The ***lower number*** in the range – host emulation #10 in this case – is mapped to the ***first*** terminal on Host #2, and the higher number – host emulation #20 in this case – is mapped to the ***11th*** terminal on Host #2

In the *Configure Existing Base Station* screen for Base Station 1:
First Terminal = 1 (no offset on the Base Station).

In this example, RF terminals (and host emulations) #10 – #20 fall within the ranges of both Host 1 and Host 2 and will, therefore, be able to communicate with *both* of them. For instance, Psion Teklogix RF terminal #13 corresponds to ***terminal #13 on Host #1*** and to ***terminal #4 on Host #2*** and will be given a choice of hosts with which to communicate (assuming they are both "TESS" hosts).

RF terminals (and host emulations) #1 – #9 fall within the range of **Host 1 only** and will therefore only be able to communicate with Host 1. These terminals will *not* be given a choice of hosts with which to communicate. In other words, when the user sets the terminal ID to a number between 1 and 9, the 9500 CommServer finds *only one match* for that host emulation and knows which host terminal to associate with this ID number.

However, when the user sets the terminal ID to a number between 10 and 20, the CommServer can find *two matches* for that host emulation, and will present the user with the choice between them. If, for instance, the terminal ID number is set to 13, the user can choose to be either terminal #13 on Host 1 or terminal 4 on Host 2.

B.3 Setting The Terminal Range (Base Stations)

The terminal ranges in the *Configure Existing Base Station* screens also act as offsets. However, these offsets are in the "opposite" sense to those of the offsets in the *General Host Options* screens. The range specified in the *Configure Existing Base Station* screens maps the host emulations to the terminal ID numbers.

The range of terminals in the *Configure Existing Base Station* screen is specified using the "First Terminal=" parameter. The value entered in this parameter is always mapped to ***RF terminal ID #1***. For instance, entering a value of 10 sets an offset of 9, and matches host emulation #10 to ***RF terminal ID #1***, host emulation #11 to ***RF terminal ID #2***, etc.

When the value is set to 1 (offset equals zero) – the RF terminal ID number is identical to the host emulation number. When the range starts with a number other than 1, an offset is created (equal to the parameter value minus 1).

In almost all situations, a value of 1 is used for this parameter on the Base Station screens. Thus, host emulation numbers and terminal ID numbers would be identical.

Note: *The terminal number specified in the "First Terminal=" parameter is always mapped to* ***RF terminal #1.*** *This means that by using offsets,* ***you cannot create a range of terminals that will start with any other RF terminal ID number!***

If you want to separate the RF terminals into groups, each communicating with different Base Stations, the correct way to do so would be by ***enabling/disabling the appropriate channels on the terminals*** *themselves. Refer to the appropriate terminal user manuals for instructions.*

Important: ***Only extremely rare situations call for offsets on base stations.***

UNDER NORMAL CIRCUMSTANCES, NO OFFSET SHOULD BE SET. EXTREME CAUTION IS ADVISED WHEN USING OFFSETS!

The offset capability was introduced to accommodate very rare situations, such as:

- Host software that requires the terminal numbers to start at a number significantly higher than 1. If the Psion Teklogix terminal ID numbers were changed to this higher range, more response windows would be required. This would cause an increase in the response time.
- A necessity for duplicate terminal ID numbers in two or more remote sites, where there is no chance of interference between the base stations.

Examples:

One host with one base station with offset

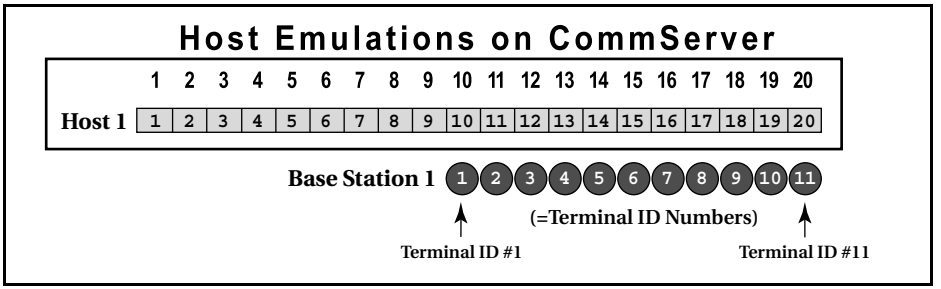


Figure B.6

In this system, we will define the ranges:

In the *General Host Options* screen for Host 1:

Terminals = 1 to 20 a range of **20 terminals** (or "host emulations"). Since this range starts at "1", the offset for this host is zero

In the *Configure Existing Base Station* screen for Base Station 1:

First Terminal = 10 creates a range of 11 terminals. Host emulation #10 is mapped to RF terminal ID #1. The other terminals follow in sequence, finishing with host emulation #20 -- RF terminal ID #11

In our diagram, we align the first terminal on Base Station 1 with host emulation #10:

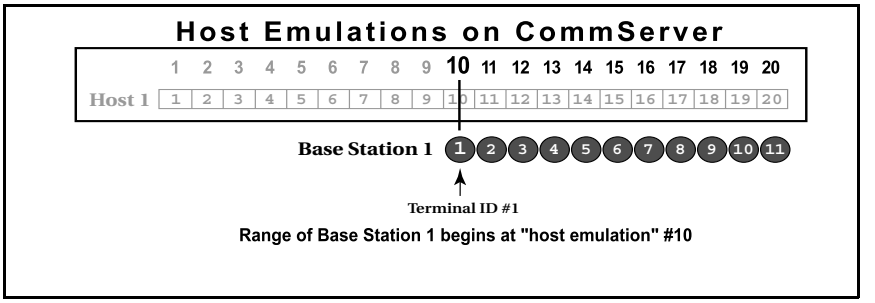

Host Emulations on CommServer
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Host 1
Base Station 1
Terminal ID #1
Range of Base Station 1 begins at "host emulation" #10

Figure B.7

Since the range on Base Station #1 is *partial* to the total number of host emulations, there will be terminal numbers for which no matching host emulation is found (terminal #12 – #20 in our example). If you set a terminal ID to any of these numbers, you will not be able to communicate with the host!

Note: *The situation depicted in this example is* ***not a practical one****, and is shown here just to demonstrate the effect of an offset on a base station.*

One host with two base stations

In this system, we will define the ranges:

In the *General Host Options* screen for Host 1:

Terminals = 1 to 20 a range of **20 terminals** (or "host emulations"). Since this range starts at "1", the offset for this host is zero

In the *Configure Existing Base Station* screen for Base Station 1:

First Terminal = 1 since this will map host emulation #1 to RF terminal ID #1, the offset for this Base Station is zero. Thus, "host emulations" #1 - #20 will match terminal ID numbers 1 through 20

In the *Configure Existing Base Station* screen for Base Station 2:

First Terminal = 10 creates a range of 11 terminals. Host emulation #10 is mapped to RF terminal ID #1, an offset of 9. The upper range of terminals will be host emulation #20 (RF terminal ID #11)

Thus, the result of this setup is:

Terminal ID #1–#9: have two matching host emulations (one via Base Station 1, the other via Base Station 2). For example – terminal ID #4 is mapped both to "host emulation #4 (via Base Station 1) *and* to host emulation #13 (via Base Station 2)

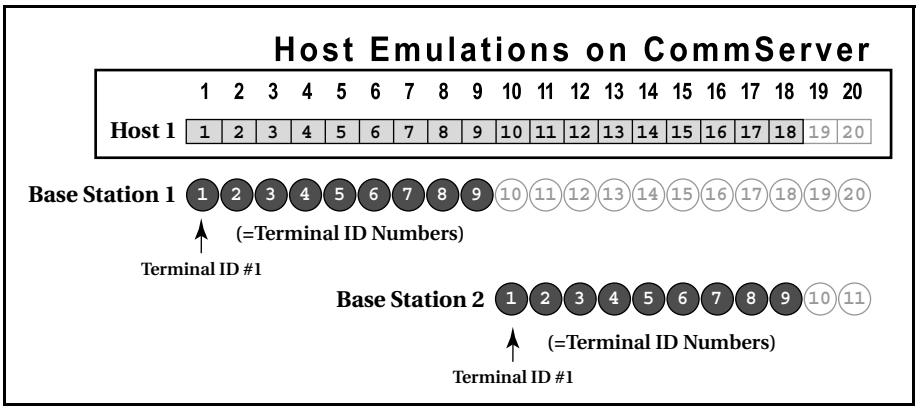


Figure B.8

Terminal ID #10–#11: match both host emulation ranges, and can thus communicate with the host via both Base Stations

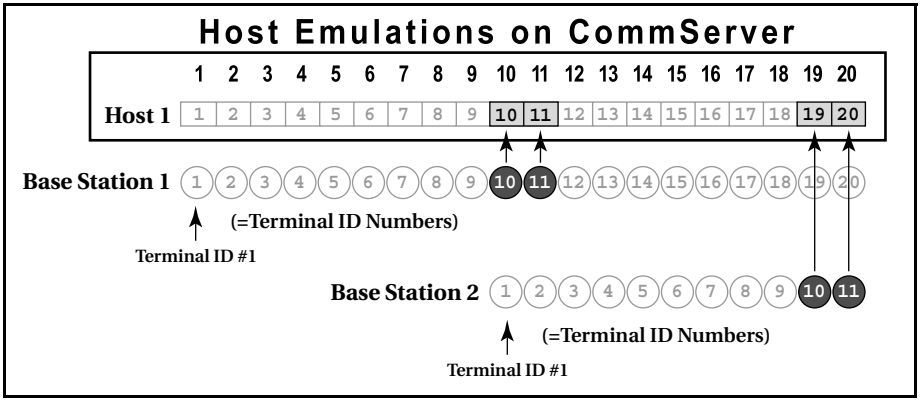

Host Emulations on CommServer
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Host 1
Base Station 1
(=Terminal ID Numbers)
Terminal ID #1
Base Station 2
(=Terminal ID Numbers)
Terminal ID #1

Figure B.9

Terminal ID #12–#20: match only one host emulation, and can thus communicate with the host *only via Base Station 1*

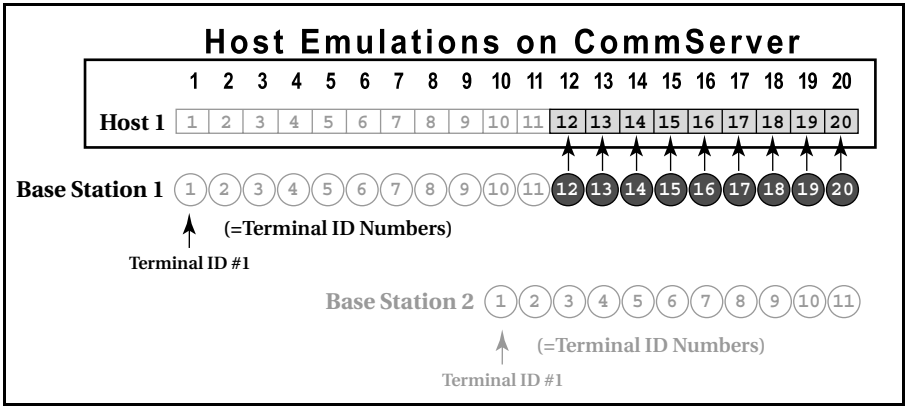

Host Emulations on CommServer
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Host 1
Base Station 1
(=Terminal ID Numbers)
Terminal ID #1
Base Station 2
(=Terminal ID Numbers)
Terminal ID #1

Figure B.10

In this situation, it is possible to have two remote base stations, and two sets of terminals with the same ID numbers.

For instance, if each site has 9 terminals, with ID numbers from 1 to 9, the CommServer will be able to distinguish between two identical terminal ID numbers by the base station to which they communicate. Terminal #1 in the first site is actually host emulation #1, and terminal #1 in the second site is actually host emulation #10.

Now, we can combine this effect with division of terminals *between hosts,* as is shown in the next example:

Two hosts with two base stations (a)

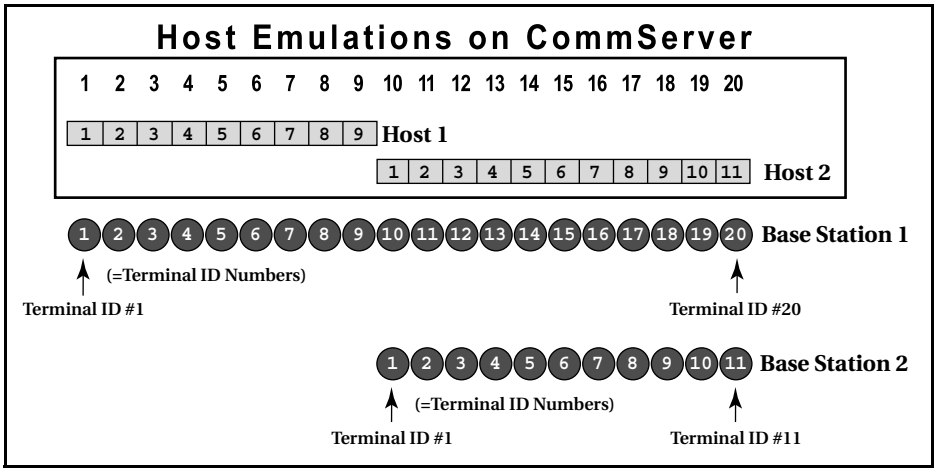

Host Emulations on CommServer
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
1 2 3 4 5 6 7 8 9
Host 1
1 2 3 4 5 6 7 8 9 10 11
Host 2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Base Station 1
(=Terminal ID Numbers)
Terminal ID #1
Terminal ID #20
1 2 3 4 5 6 7 8 9 10 11
Base Station 2
(=Terminal ID Numbers)
Terminal ID #1
Terminal ID #11

Figure B.11

In this system, we will define the ranges:

In the *General Host Options* screen for Host 1:

Terminals = 1 to 9 a range of **9 terminals** (or "host emulations") for Host 1. Since this range starts at 1, the offset for this host is zero and the RF terminal ID numbers will be identical to the host emulation numbers

In the *General Host Options: Host 2* screen:

Terminals = 10 to 20 a range of **11 terminals** (or "host emulations") for Host #2. The ***lower number*** in the range – host emulation #10 in this case – is mapped to the ***first*** terminal on Host #2, and the higher number – host emulation #20 in this

case – is mapped to the ***11th*** terminal on Host #2 -- an offset of 9

In the *Configure Existing Base Station* screen for Base Station 1:

First Terminal = 1 since this will map host emulation #1 to RF terminal ID #1, the offset for this Base Station is zero. Thus, "host emulations" #1 - #20 will match terminal ID numbers 1 through 20

In the *Configure Existing Base Station* screen for Base Station 2:

First Terminal = 10 creates a range of 11 terminals. Host emulation #10 is mapped to RF terminal ID #1, an offset of 9. The upper range of terminals will be host emulation #20 (RF terminal ID #11)

Thus, the result of this setup is:

Terminal ID #1–#9: can communicate to *Host 1 only* (if communicating via Base Station 1) **or** to *Host 2 only* (if communicating via Base Station 2)

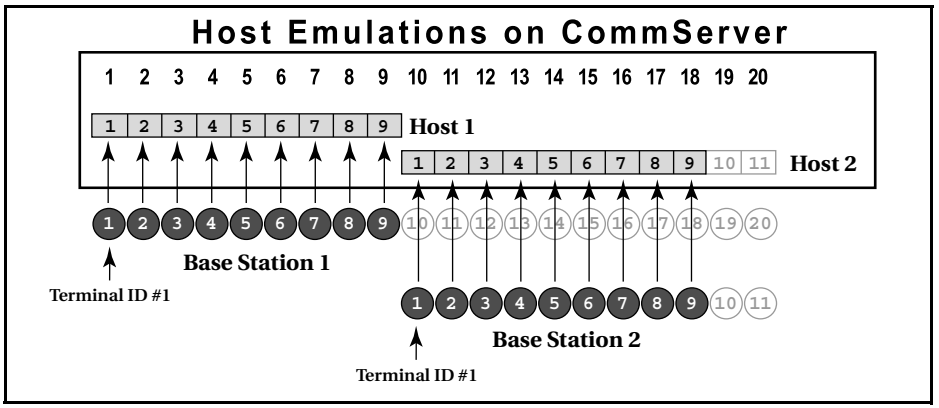


Figure B.12

Terminal ID #10–#11: can communicate to *Host 2 only,* using host emulation #1 & #2 if communicating via Base Station 1 or using host emulation #10 & #11 if communicating via Base Station 2

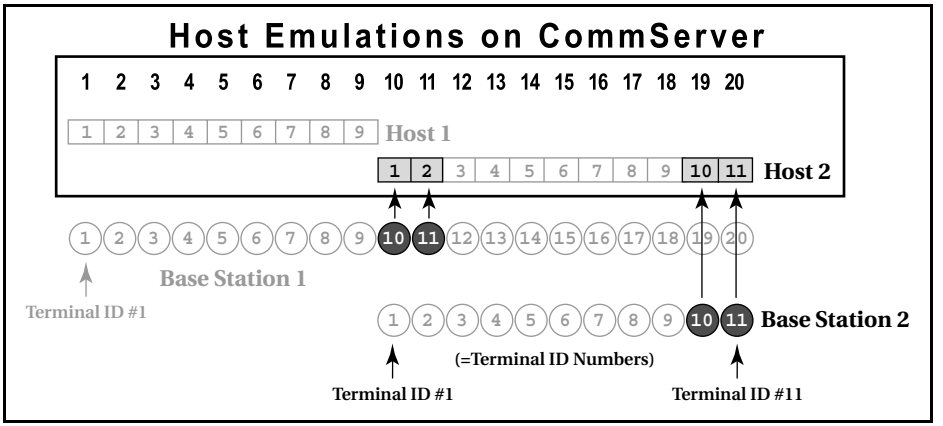


Figure B.13

Terminal ID #12–#20: can only communicate with Host 2 via Base Station 1

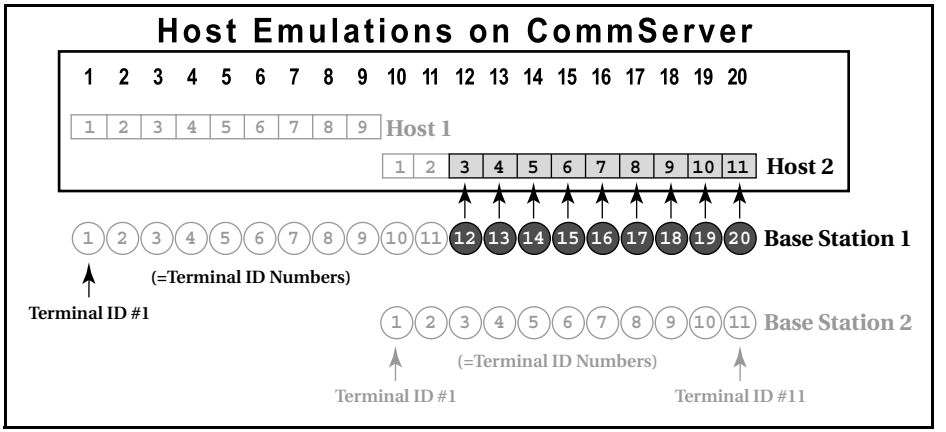

Host Emulations on CommServer
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
1 2 3 4 5 6 7 8 9
Host 1
1 2 3 4 5 6 7 8 9 10 11
Host 2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Base Station 1
(=Terminal ID Numbers)
Terminal ID #1
1 2 3 4 5 6 7 8 9 10 11
Base Station 2
(=Terminal ID Numbers)
Terminal ID #1
Terminal ID #11

Figure B.14

This type of setup could be useful, for example, when you have two remote base stations, and want each set of terminals to start with ID #1. The CommServer will then be able to distinguish between two identical terminal ID numbers by the base station to which they communicate.

In this last example, terminal #1 in the first site is actually host emulation #1 (which belongs to Host 1), and terminal #1 in the second site is actually "host emulation" #10 (which belongs to Host 2).

Our final example is even more complex than the last:

Two hosts with two base stations (b)

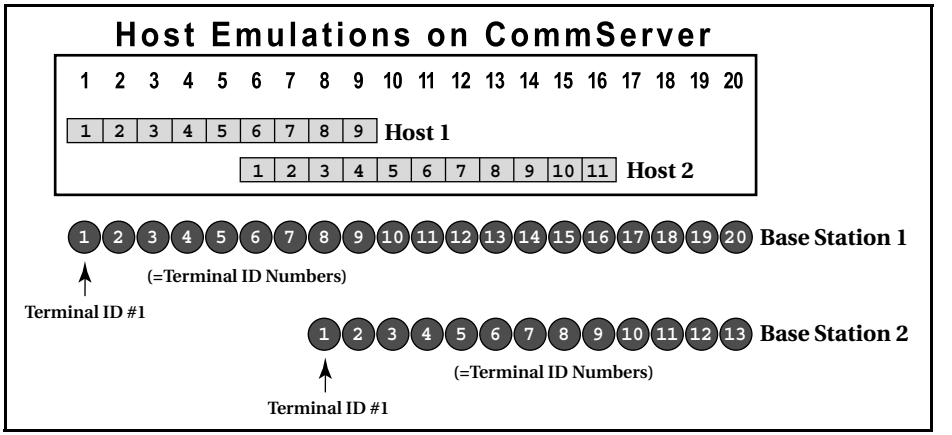

Host Emulations on CommServer
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
1 2 3 4 5 6 7 8 9
Host 1
1 2 3 4 5 6 7 8 9 10 11
Host 2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Base Station 1
(=Terminal ID Numbers)
Terminal ID #1
1 2 3 4 5 6 7 8 9 10 11 12 13
Base Station 2
(=Terminal ID Numbers)
Terminal ID #1

Figure B.15

Important: ***YOU CANNOT OVERLAP AN ANSI HOST WITH EITHER ANOTHER ANSI HOST OR WITH A TESS HOST!***

In this system, we will define the ranges:

In the *General Host Options* screen for Host 1:

Terminals = 1 to 9 a range of **9 terminals** (or "host emulations") for Host #1. Since this range starts at 1, the offset for this host is zero and the RF terminal ID numbers will be identical to the host emulation numbers

In the *General Host Options* screen for Host 2:

Terminals = 6 to 16 a range of **11 terminals** (or "host emulations"). The ***lower***

number in the range – host emulation #6 in this case – is mapped to the ***first*** terminal on Host #2, and the higher number – host emulation #16 in this case – is mapped to the ***11th*** terminal on Host #2, an offset of 5

In the *Configure Existing Base Station* screen for Base Station 1:

First Terminal = 1 since this will map host emulation #1 to RF terminal ID #1, the offset for this Base Station is zero. Thus, "host emulations" #1 - #20 will match terminal ID numbers 1 through 20

In the *Configure Existing Base Station:* screen for Base Station 2:

First Terminal = 8 creates a range of 13 terminals. Host emulation #8 is mapped to RF terminal ID #1, an offset of 7. The upper range of terminals will be host emulation #20 (RF terminal ID #13)

Thus, the result of this setup is:

Terminal ID #1–#2: can communicate to *Host 1 only* (when communicating via Base Station 1) **or** to *both Host 1 and Host 2* (when communicating via Base Station 2).

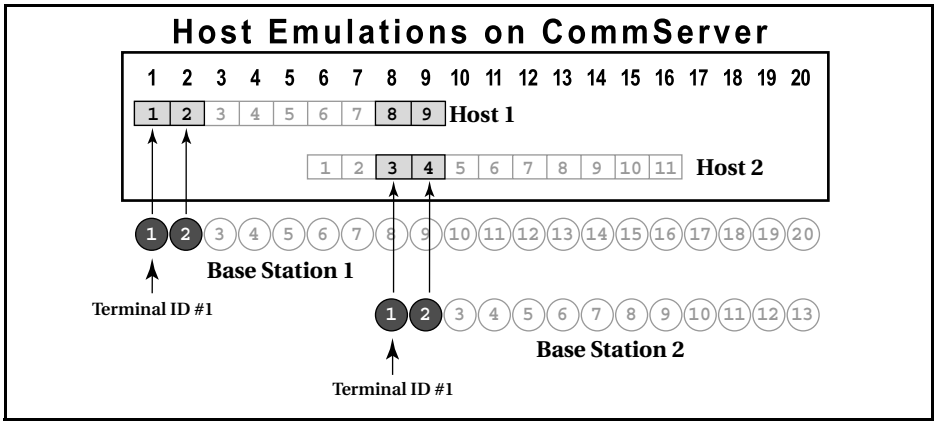

Host Emulations on CommServer
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Host 1
Host 2
Base Station 1
Terminal ID #1
Base Station 2
Terminal ID #1

Figure B.16

Terminal ID #3–#5: can communicate to *Host 1 only*
(when communicating via Base Station 1)
or
to *Host 2 only*
(when communicating via Base Station 2).

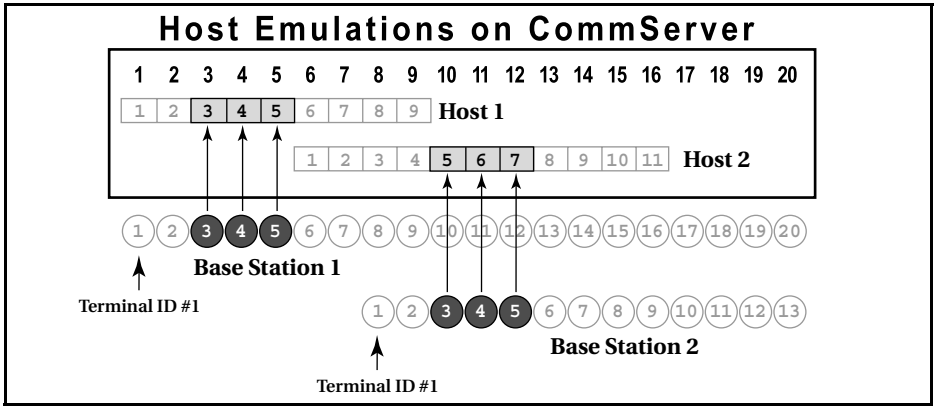

Host Emulations on CommServer
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
1 2 3 4 5 6 7 8 9
Host 1
1 2 3 4 5 6 7 8 9 10 11
Host 2
Base Station 1
Terminal ID #1
Base Station 2
Terminal ID #1

Figure B.17

Terminal ID #6–#9: can communicate to *both Host 1 and Host 2*
(when communicating via Base Station 1)
or
to *Host 2 only*
(when communicating via Base Station 2).

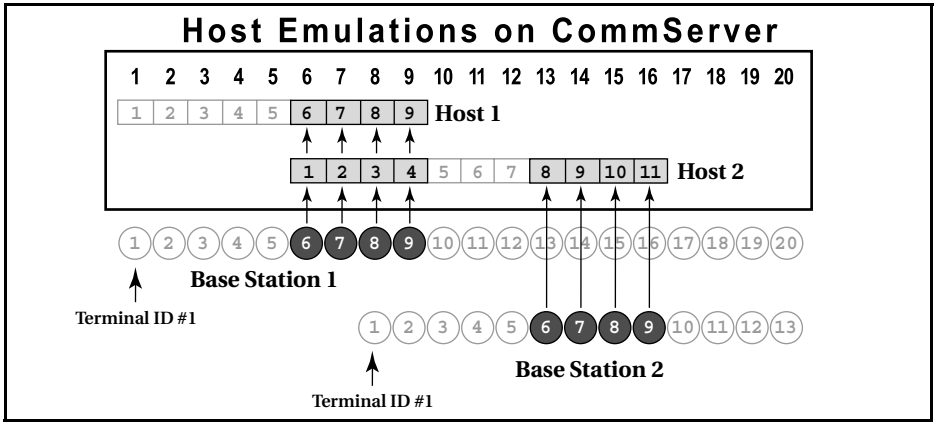

Host Emulations on CommServer
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
1 2 3 4 5 6 7 8 9
Host 1
1 2 3 4 5 6 7 8 9 10 11
Host 2
Base Station 1
Terminal ID #1
Base Station 2
Terminal ID #1

Figure B.18

Terminal ID #10-#16: can communicate to *Host 2 only* (via Base Station 1).

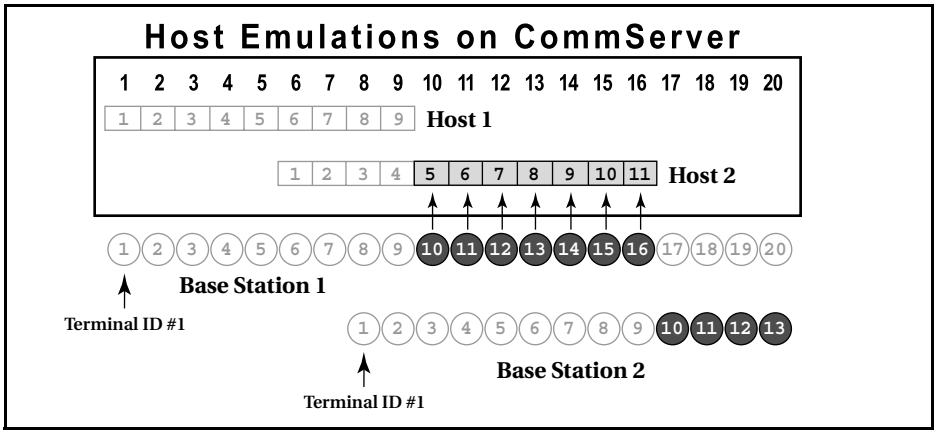


Figure B.19

Terminal ID #17–#20: cannot communicate with any host (no host is configured with a range or offset high enough).

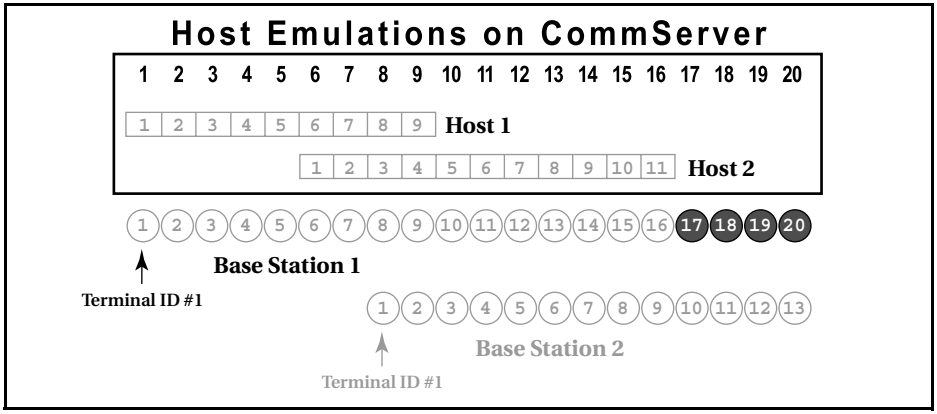


Figure B.20

APPENDIX C

THE 9500 COMMSERVER'S WEB INTERFACE

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C.1 Introduction

This guide describes all the screens accessible through the web interface of the Psion Teklogix Communications Server.

C.1.1 About The 9500 CommServer's Web Interface

The 9500 Communications Server presents a number of screens through a web interface. These include:

- Host application screens from 3274 and 5250 hosts.
  See Section C.1.2 on page C-3.
- Configuration screens for the Psion Teklogix software.
  See Section C.1.3 on page C-5.

These interfaces require that a connection using Internet Protocol (IP) be made to the CommServer from another machine. A web browser can then be used to view screens and make changes.

C.1.2 The CommServer's Host-Application Screens

To connect to the web-based host-application screens for the CommServer, direct a browser to:

```
http://<IP Address>:80/
```

where **`IP Address`** represents the CommServer's IP address, and **`80`** is TCP Port 80, the standard port for HTTP connections.

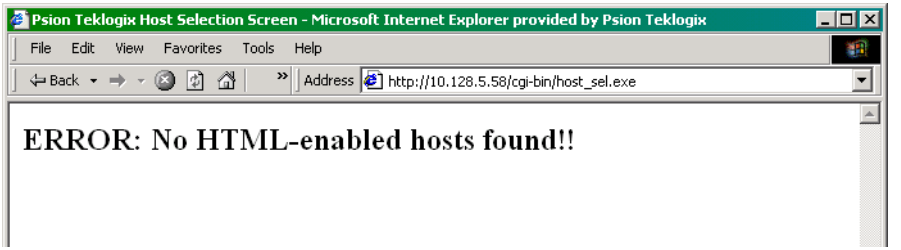
C.1.2.1 The Host-Application Screens

The 9500 CommServer will only present host application screens as web pages if a 3274 or 5250 host is configured to use the HTML/HTTP protocol to send application screens to the terminal. This is selected in the Protocol Options screen for that host emulation. See the following pages:

- For 3274 emulations, see page C-50.
- For 5250 emulations, see page C-67.

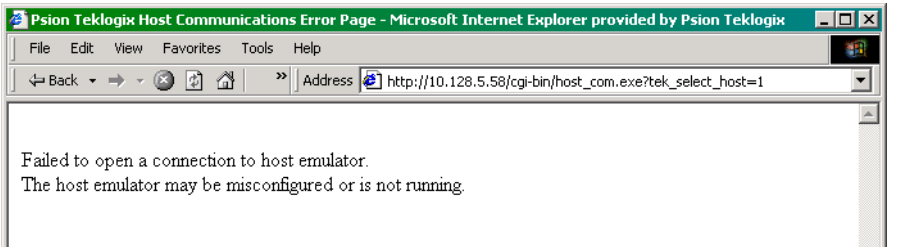
Only 3274 and 5250 emulations may be configured to use this option.

If *no* host application is configured to present screens through HTML/HTTP, the CommServer displays the following screen to browsers connecting at port 80:

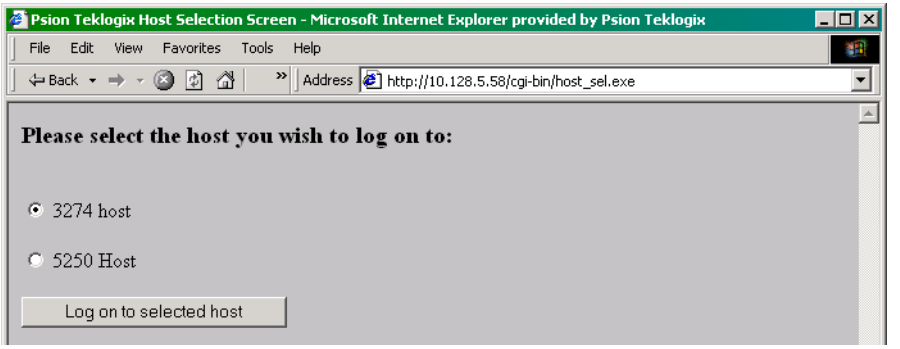

Psion Teklogix Host Selection Screen - Microsoft Internet Explorer provided by Psion Teklogix
File Edit View Favorites Tools Help
Back
Address http://10.128.5.58/cgi-bin/host_sel.exe
ERROR: No HTML-enabled hosts found!!

If *one* host application is configured to present screens through HTML/HTTP, the CommServer briefly displays a redirect screen to browsers connecting at port 80, then displays the opening screen of the host application.

If a host application is present but misconfigured so that the CommServer cannot connect to the host, the CommServer displays the following screen:


Psion Teklogix Host Communications Error Page - Microsoft Internet Explorer provided by Psion Teklogix
File Edit View Favorites Tools Help
Back
Address http://10.128.5.58/cgi-bin/host_com.exe?tek_select_host=1
Failed to open a connection to host emulator.
The host emulator may be misconfigured or is not running.

If *more than one* host application is configured to present screens through HTML/HTTP, the CommServer displays a choice screen to browsers connecting at port 80:


Psion Teklogix Host Selection Screen - Microsoft Internet Explorer provided by Psion Teklogix
File Edit View Favorites Tools Help
Back
Address http://10.128.5.58/cgi-bin/host_sel.exe
Please select the host you wish to log on to:
3274 host
5250 Host
Log on to selected host

From this screen the user can choose the host to connect to. The CommServer then displays the first application screen for that host.

C.1.2.2 Limitations Of The Host-Application Screens

Due in part to the nature of the HTTP protocol used by web browsers, these host screens suffer some limitations compared host screens transferred through TESS or ANSI protocols. In particular, the terminal's browser must request new screens and updates; there is no way for the host to transfer information to the terminal without a request from the terminal.

These limitations include:

- Expedited messages, a break message, or screens that are sent by the host without prompting from the terminal will not be received by the web browser until the user sends data to the host (for example, by pressing the Refresh button or submitting the page).
- Web browsers receive a terminal ID from a pool. There is no way to map a terminal number to an IP or specific web browser session.
- By default the cursor mode is set to Insert and every time a new page is received the cursor mode is set to Insert. If there is pre-filled data in a field the Insert key must be pressed to overwrite it.
- The function keys on the PC or terminal do not function as application function keys. The HTML function-key buttons provided at the bottom of the host application screen must be pressed to provide the proper function-key operation.

C.1.3 The CommServer's Web Configuration Screens

To connect to the web-based configuration screens for the 9500 CommServer, direct a browser to:

`http://<IP Address>:8008/`

where **`IP Address`** represents the CommServer's IP address, and **`8008`** is TCP Port 8008.

The CommServer's web interface uses a number of the standard web control elements, such as *text links*, *buttons* and *listboxes*. In graphical browsers, these elements are manipulated using the cursor and a pointing device, such as a mouse; text-mode browsers may use different controls. Consult your browser documentation for details.

The following pictures present several of the CommServer's web-interface screens as displayed by Netscape 4.03 running on a Windows 95 system. Each browser renders the parts of the screen in its own way; other browsers or other operating systems may appear somewhat different.

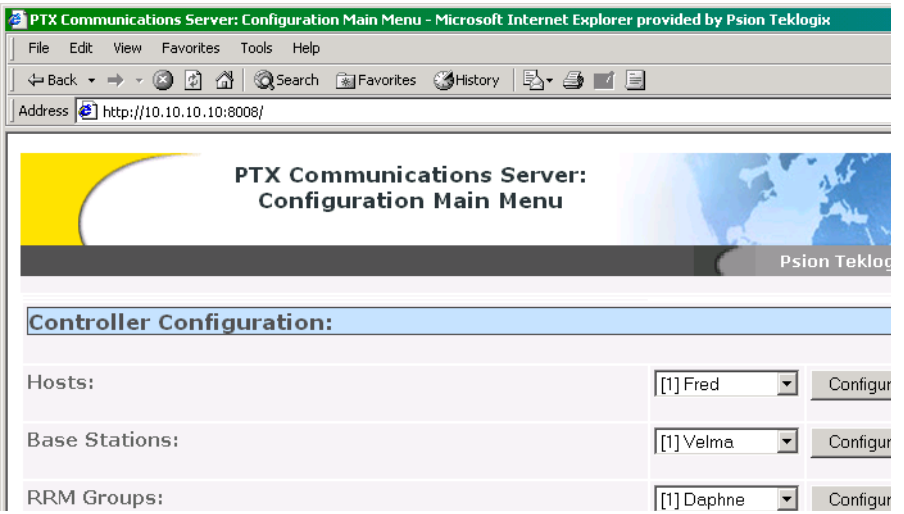


Figure C.1 A Browser Screen With Textboxes, Listboxes, Checkboxes And Buttons

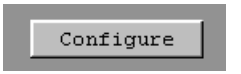
This screen contains a selection of HTML elements used by the CommServer: textboxes, a listbox, checkboxes, and buttons.

HTML elements used by the CommServer are described below:

- *Text links:* When a *text link* is selected, the browser fetches another page from the CommServer. Text links are often shown in graphical browsers as coloured and underlined text, and they will be indicated in this manual as underlined text:

  text link

- *Buttons:* When a *button* is selected, data is sent to the server to request another page. Buttons are often rendered to appear three-dimensional, so that they appear to move in and out when selected; this can be described as *pressing* the button. This manual indicates buttons as dark rectangles with white text:

  Configure

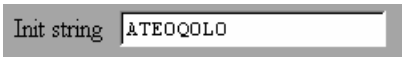
- *Checkboxes:* A *checkbox* allows the user to select or deselect an item, independently of other items, similarly to checking off items on a list. The selected item is indicated by a dot, an X, a check mark ✓ , or some other mark filling the centre of the checkbox. Checkboxes are usually rendered by the browser as squares. This manual will indicate checkboxes as squares. *Selected* checkboxes are shown as squares containing checkmarks:

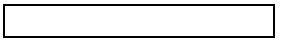
☐ checkbox text ☑ checkbox text

- *Radiobuttons:* Like checkboxes, *radiobuttons* allow the user to select an item. However, radiobuttons occur in groups, and they are *mutually exclusive:* when one of the buttons is selected, all of the other associated buttons are forcibly deselected. This mimics the action of push-button station selectors on old-fashioned car radios, hence the name. Radiobuttons are usually rendered by the browser as circular; this manual will indicate them as circles. *Selected* radiobuttons are indicated as circles containing dots:

◯ Even ◉ None

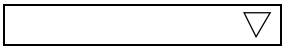
- *Textboxes:* A *textbox* allows the user to type text into an area of the screen. Some textboxes may contain default text. This manual indicates textboxes as rectangles:





- *Listboxes:* A *listbox* allows the user to select from among a number of choices. An unselected listbox displays its default choice; when the listbox is selected, it

displays all of its choices and allows the user to choose from them. This manual indicates listboxes as rectangles with triangles:



Note: *Since these elements are rendered by the browser, their appearance will vary from one browser to another.*

C.1.3.1 Items Common To Many Screens

There are a number of features common to many screens of the CommServer's web interface. The most frequent of these are the *OK, Cancel*, and *Main Menu* buttons.

OK Button

When the user presses the *OK* button after making changes in a screen, the CommServer accepts the changes, saves them to the temporary configuration cache, and displays a confirmation screen:

When the user presses the *OK* button on this screen, the CommServer displays the *Configuration Main Menu*.

Notes:

1. *From some screens the OK button causes the CommServer to display the Hosts menu, the Base Stations menu, or the RRM Groups Menu.*

   From any of these menus, pressing the Main Menu button causes the CommServer to display the Configuration Main Menu.

2. *To make changes permanent, validate them by pressing the Validate button on the CommServer's Configuration Main Menu. The CommServer then checks the changes for errors. The changes may be saved by pressing the Commit button on the Database Validation Results screen.*

Cancel Button

Cancel

This button discards any changes that have been made to the values in this screen and displays the *Main Configuration* screen.

Note: *From some screens this button may display the Hosts menu, the Base Stations menu, the RRM Groups Menu, or the Database Backup menu. From any of these menus, pressing the Main Menu button causes the CommServer to display the Configuration Main Menu.*

Main Menu Button

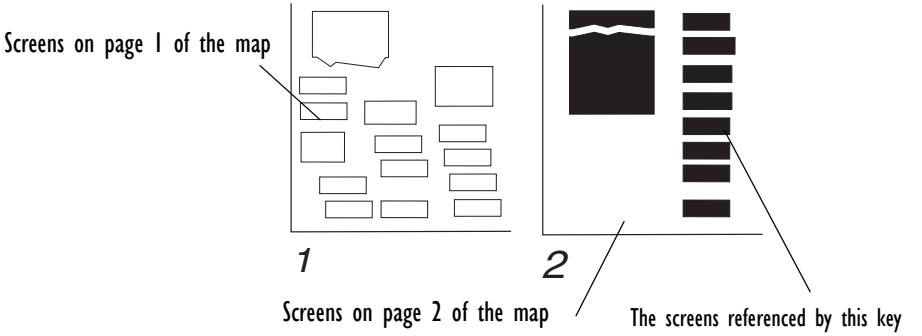
Main Menu

This button displays the *Configuration Main Menu* when it is pressed in the *Hosts Menu*, the *Base Stations Menu*, the *RRM Groups Menu,* or the *Database Backup Menu*.

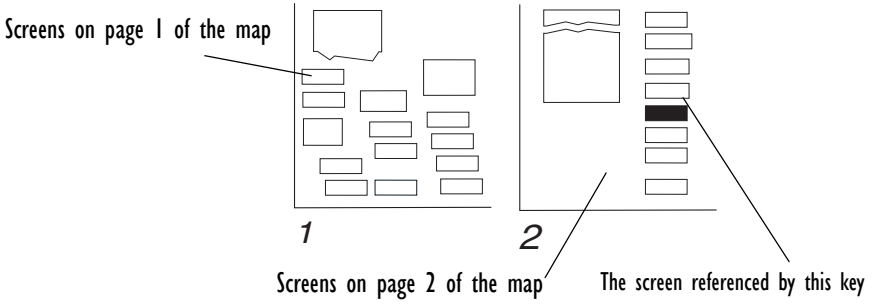
C.1.3.2 Finding Screens

Two pages of *maps* starting on page C-12 show the relations of the various screens of the 9500 Communications Server's web interface.

In the lower right corner of each map is a *screen key* showing the arrangement of all of the CommServer's Web screens on all of the map pages; the screen or screens referenced on that particular page are coloured black.



This key is also provided with the descriptions of the individual screens, following page C-14. The individual screen is coloured black here.



In some places in the CommServer's web interface, the user can choose an item from a listbox, then press a corresponding button.

The CommServer then displays a screen corresponding to the item in the list. The displayed screen is one of a number of related screens, one for each item in the list.

If the user can *add* new items to the list, there is a selection labeled appropriately in the listbox. Choosing this item and pressing the button opens a screen that allows the new item to be configured. In some cases, it is necessary to return to the main menu to configure additional properties for the new item.

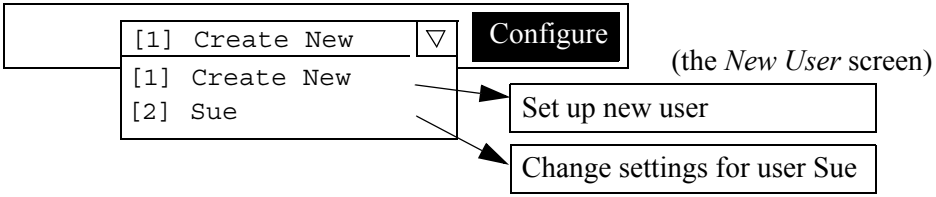
In the example below, the *Users* listbox on the CommServer's *Configuration Main Menu* has a listbox containing the names of the users, along with a *Create New* selection. There are at least two screens accessible by pressing the *Configure* button.

One screen, the *New User* screen, allows the addition of a new user.

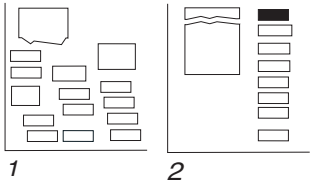
The other screens, the *User* screens, give the details of the existing users. There is one *User* screen for each user.

All of these screens, however, are represented as one in the screen key.

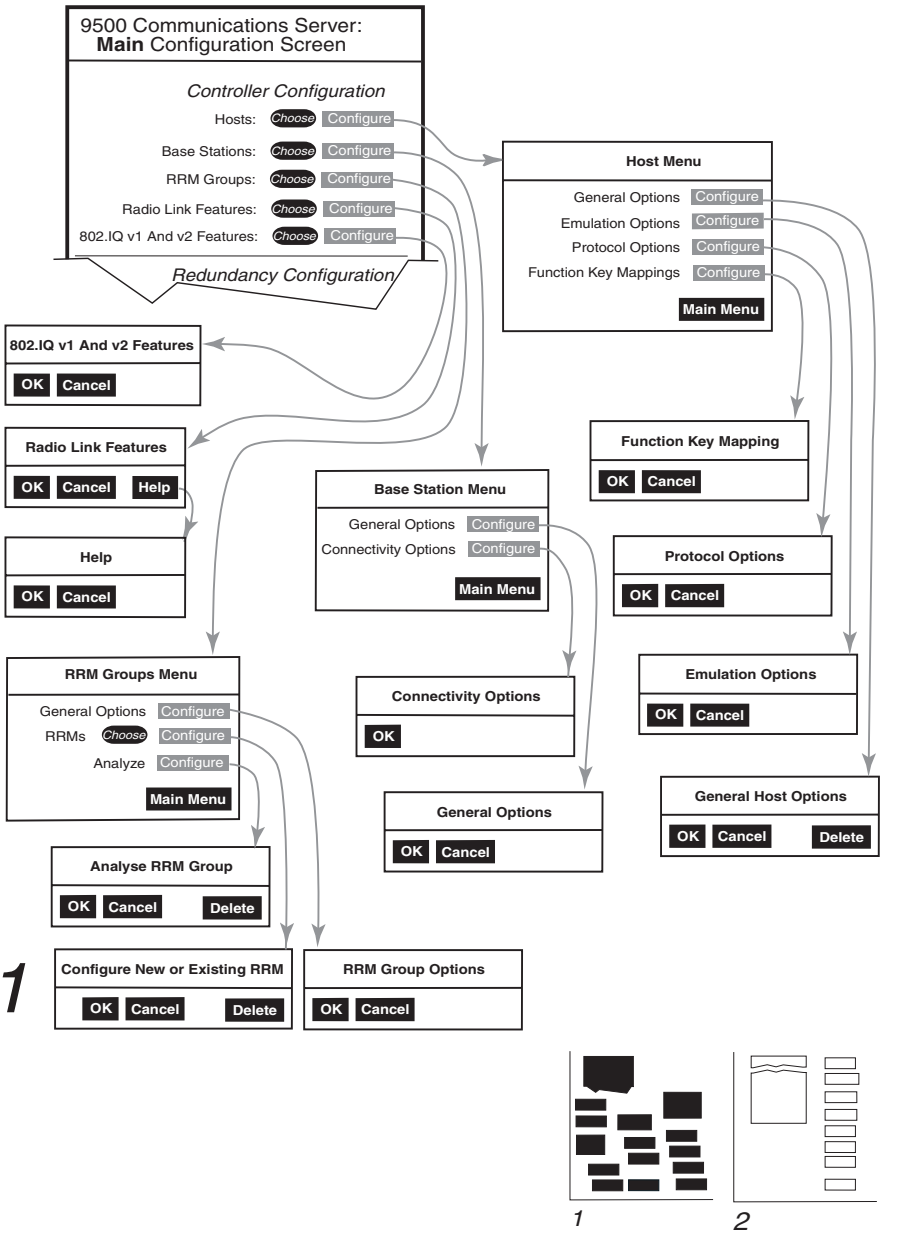
The *Users* listbox on the *Configuration Main Menu*:

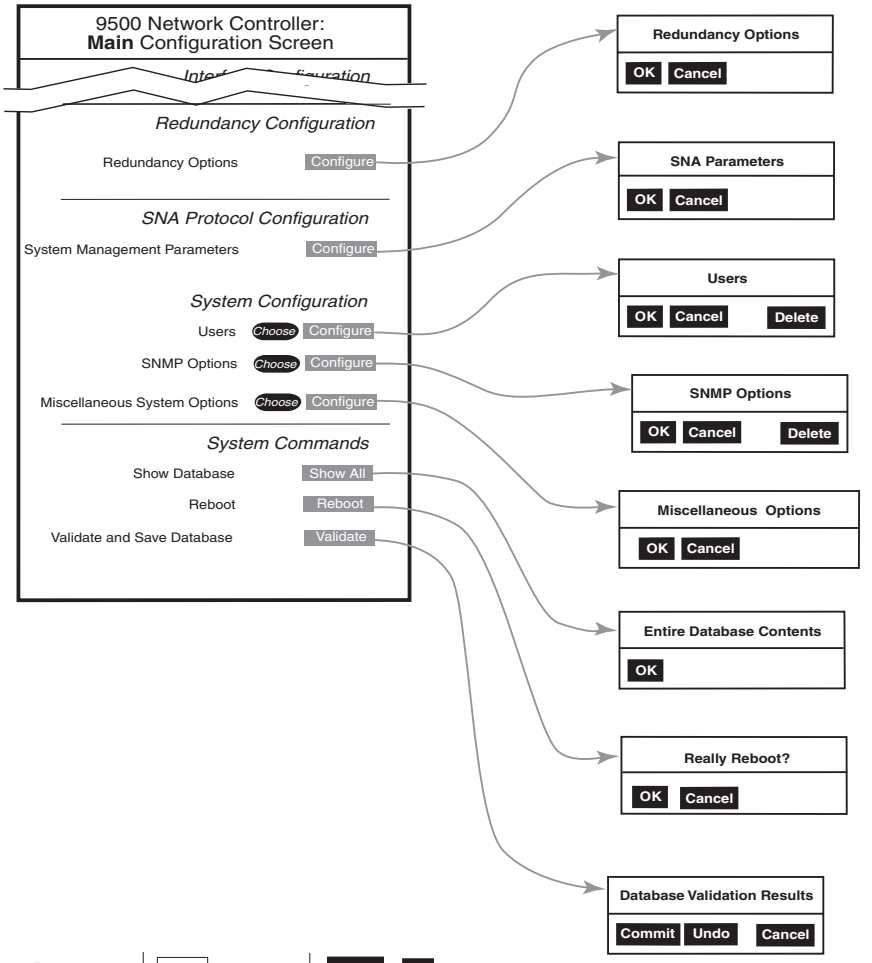


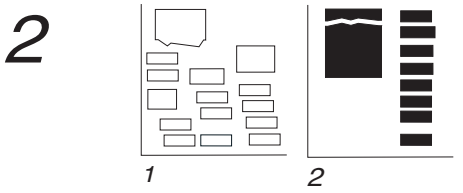
The screen key for the *User* and *New User* screens:



C.1.3.3 Maps Of The CommServer's Web Interface



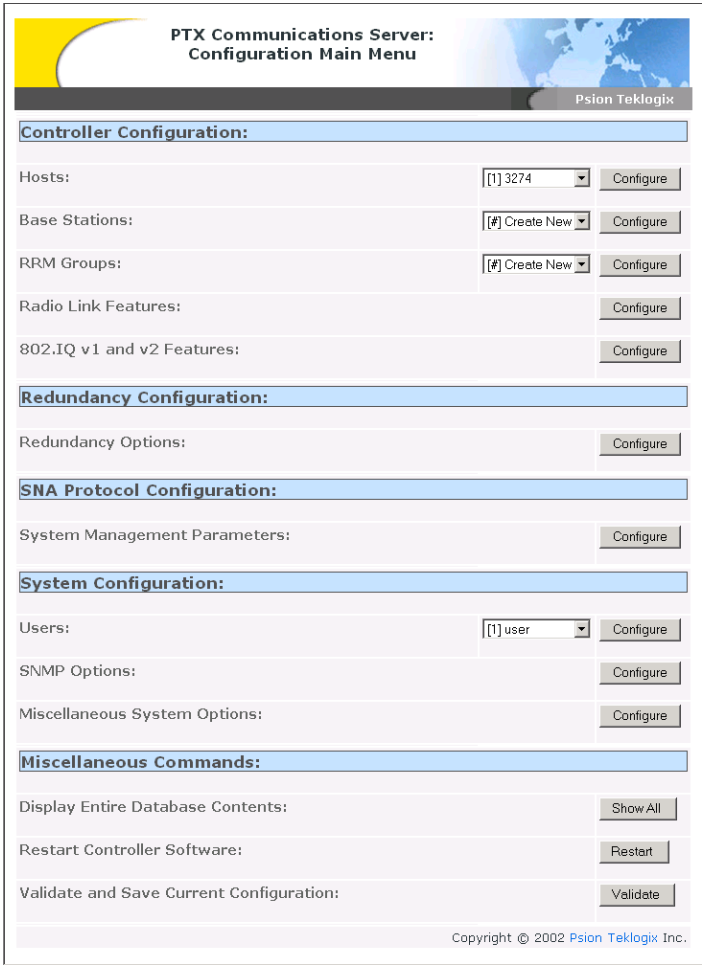

9500 Network Controller:
Main Configuration Screen
Redundancy Configuration
Redundancy Options
Configure
SNA Protocol Configuration
System Management Parameters
Configure
System Configuration
Users
Choose
Configure
SNMP Options
Choose
Configure
Miscellaneous System Options
Choose
Configure
System Commands
Show Database
Show All
Reboot
Reboot
Validate and Save Database
Validate
Redundancy Options
OK
Cancel
SNA Parameters
OK
Cancel
Users
OK
Cancel
Delete
SNMP Options
OK
Cancel
Delete
Miscellaneous Options
OK
Cancel
Entire Database Contents
OK
Really Reboot?
OK
Cancel
Database Validation Results
Commit
Undo
Cancel

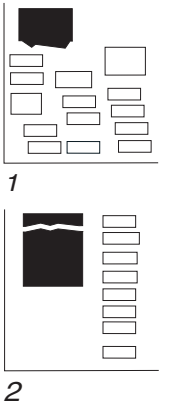

2
1
2

C.2 The Web Configuration Screens

In this section all the web configuration screens of the CommServer are presented.

C.2.1 The Configuration Main Menu Screen





The CommServer's *Configuration Main Menu* screen is the first screen presented when the user connects to the CommServer. It is divided into five parts: *Controller Configuration*, *Redundancy Configuration*, *SNA Protocol Configuration, System Configuration*, and *Miscellaneous Commands*. These parts are described in the following sections.

C.2.1.1 Controller Configuration

From this part of the *Configuration Main Menu*, the links from the CommServer to hosts and to Psion Teklogix bases can be configured. There are four items in this section: *Hosts*, *Base Stations*, *RRM Groups*, and *Radio-Link Features*.

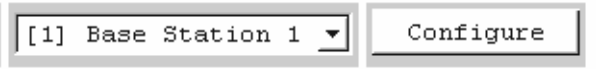
Hosts

The *Hosts* listbox allows the user to select a host connection. Choices include host connections already configured for this CommServer, and a special *Create New* choice.

Pressing the *Configure* button displays the configuration screen for the selected host connection. If *Create New* is selected, the user may choose a new host to add to the listbox; the new host connection can then be configured in the same way as previously-existing choices.

See "Controller Configuration: The Host Screens" on page C-19 for details.

Base Stations



The *Base Stations* listbox allows the user to select a base station connection. Choices include base station connections already configured for this CommServer, and a special *Create New* choice.

Pressing the *Configure* button displays the configuration screen for the selected base station connection. If *Create New* is selected, the user may choose a new base station to add to the listbox; the new base station connection can then be configured in the same way as previously-existing choices.

See "CommServer Configuration: The Base Station Screens" on page C-132 for details.

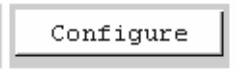
RRM Groups

The *RRM Groups* listbox allows the user to select a group of RRMs. Choices include RRM groups already configured for this CommServer, and a special *Create New* choice.

Pressing the *Configure* button displays the configuration screen for the selected RRM group. If *Create New* is selected, the CommServer displays a configuration screen for the new RRM group. The user may choose RRMs to add to the new RRM group.

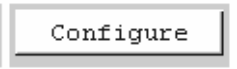
See "CommServer Configuration: The RRM Groups Screens" on page C-140 for details.

Radio-Link Features



Pressing the *Radio-Link Features* button displays a number of configuration options related to the radio link. See "CommServer Configuration: Radio Link Features" on page C-160 for details.

802.IQ v1 And v2 Features

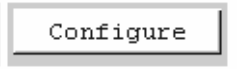


Pressing the *802.IQ v1 And v2 Features* button displays a number of configuration options related to the radio link. See "CommServer Configuration: 802.IQ v1 And v2 Features" on page C-165 for details.

C.2.1.2 Redundancy Configuration

This section of the *Configuration Main Menu* has only one item: *Redundancy Options*.

Redundancy Options



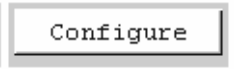
Pressing the *Redundancy Options* button displays the *Redundancy Parameters* screen. Here are options for polling and communication between this CommServer, the backup CommServer, and the network.

See "Redundancy Options" on page C-168 for details.

C.2.1.3 SNA Protocol Configuration

From this part of the *Configuration Main Menu*, options for SNA networking from the CommServer to IBM hosts can be configured. There is one item in this section: *System Management Parameters*.

System Management Parameters



Pressing the *System Management Parameters* button displays the *SNA Parameters* screen. From this screen, the user can set certain options for SNA including network name, local control point name, and exchange identifier.

See "System Configuration: SNA Parameters" on page C-172 for details.

C.2.1.4 System Configuration

From this part of the *Configuration Main Menu*, the user can set system-wide options for this CommServer. There are two items in this section: *Users*, and *Miscellaneous System Options*.

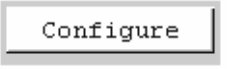
Users

The *Users* listbox allows the user to select a user who is allowed to log in to this CommServer. Choices include users who are already granted access to the CommServer; there is also a special *Create New* choice.

Pressing the *Configure* button displays the configuration screen for the selected user. If *Add Entry* is selected, the user may add a new user to the CommServer. An entry for the new user is added to the listbox; the new entry can then be configured in the same way as previously-existing entries.

See "System Configuration: The Users Screens" on page C-173 for details.

Miscellaneous System Options



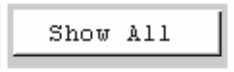
Pressing the *Miscellaneous System Options* button displays the *Miscellaneous System Options* screen. This screen contains settings for the CommServer's serial number, and the maximum number of terminals allowed to connect to it.

See "System Configuration: Miscellaneous System Options" on page C-177 for details.

C.2.1.5 Miscellaneous Commands

From this section, the user can check and save the CommServer's configuration, or reboot the Psion Teklogix software in the CommServer.

Display Entire Database Contents



Pressing the *Show All* button causes the CommServer to display the *entire* contents of its configuration database.

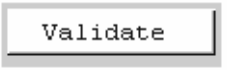
See "Display Entire Database Contents" on page C-179 for details.

Restart Controller Software

Pressing the *Restart* button causes the CommServer to display a warning screen asking for confirmation of the request to restart. If confirmation is given to reboot, the CommServer displays a last *Restarting...* screen, then is offline while it reboots.

See "Restart The CommServer Software" on page C-180 for details.

Validate And Save Current Configuration

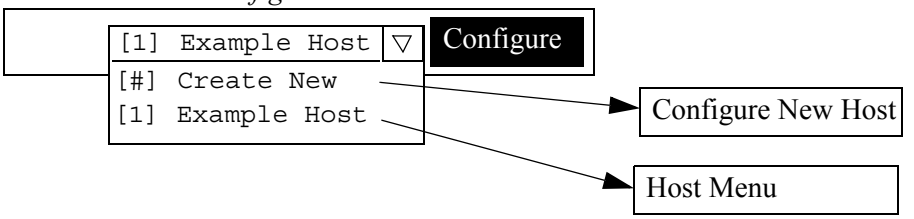


Pressing the *Validate* button causes the CommServer to check the contents of its configuration cache, where recent changes are stored. The CommServer then displays a screen listing any errors, then offers the choice to commit to the new configuration, revert to the last saved configuration, or cancel and return to the main screen.

See "Validate and Save Database Contents" on page C-181 for details.

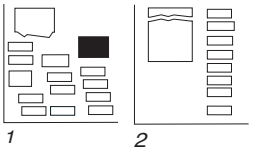
C.2.2 Controller Configuration: The Host Screens

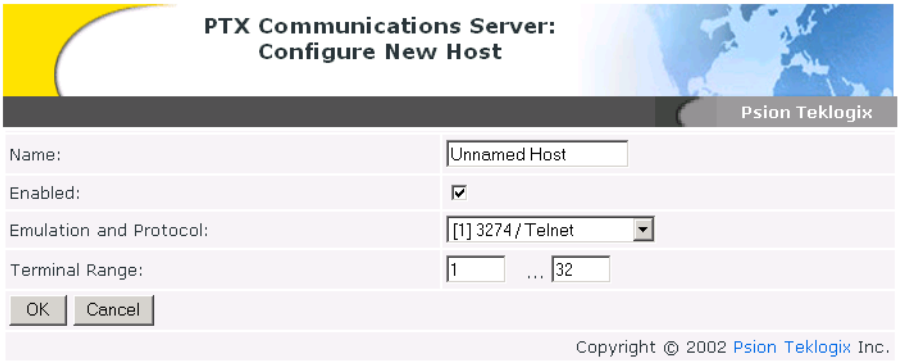
Hosts listbox on *Configuration Main Menu*:



The host screens of the CommServer are accessible from the *Hosts* listbox and selection button.

C.2.2.1 Configure New Host





When the user chooses the *Add Host* selection host from the *Hosts* listbox and then presses the *Configure* button, the CommServer displays the *Configure New Host* screen.

In this screen, the user can set a name for, set an emulation and protocol for, and enable, a new host.

Protocols

Protocols are the methods by which terminals communicate with host computers. The CommServer supports the TCP/IP and SNA protocols.

Protocols can operate over various physical media such as wired Ethernet or radio connections.

Emulations

Working with Psion Teklogix terminals and base stations, the CommServer can emulate IBM model 3277, 3278-2, 5251-11, and 5555-B01 terminals, as well as ANSI terminals.

Only certain combinations of emulation and protocol are supported:

	TCP/IP	SNA
2392	yes	
3274	yes	yes
5250	yes	yes
ANSI	yes	

Name Textbox

Name: [ ]

Values: **<any text string>**

Default: **Unnamed Host**

This textbox allows the user to enter a name for the new host.

Note: *The name must not contain space characters.*

Enabled Checkbox

Enabled: ☑

Values: **<selected>, <unselected>**

Default: **<selected>**

If this checkbox is selected, the CommServer will enable the connection to this host as it boots.

Emulation and Protocol Listbox

Emulation and Protocol: ▽

Values: **Configure New, 3274/Telnet, 3274/SNA, 5250/Telnet, 5250/SNA, ANSI/Telnet, 9010/Telnet, 2392/Telnet, RF Modem/Telnet, HTML, Remote Sockets**

Default: **3274/Telnet**

This listbox allows the user to select the emulation and protocol to be used for the connection to this host. Only certain combinations of emulation and protocol are available.

Terminal Range Textboxes

Terminal Range: [ ] ... [ ]

Values: **<see text>**

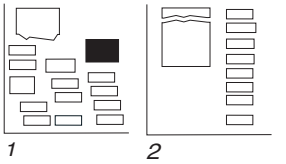
Default: **1 ... 32**

These textboxes allow the user to specify the range of terminals which will communicate with this host. The left-hand textbox contains the lowest terminal number which is allowed to communicate with the host; the right-hand textbox contains the highest terminal number.

Terminal numbers may range from 1 to 3840.

Note: *The Model S900L software-only version of the CommServer can handle a maximum of 50 terminals, so its highest terminal number is 50.*

C.2.2.2 The Host Menu



When the user chooses an existing host from the *Hosts* listbox and then presses the *Configure* button, the CommServer displays the *Host Menu*.

The *Host Menu* has four *Configure* buttons, which are located next to the following text:

- General Options

  When the user presses this *Configure* button, the CommServer displays the *General Options* screen for this host.

- Emulation Options

  When the user presses this *Configure* button, the CommServer displays the *Emulation Options* screen for this host. This screen varies depending on the type of emulation and protocol selected for the host.

- Protocol Options

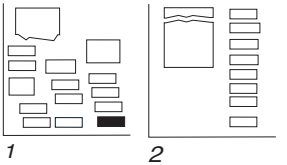
  When the user presses this *Configure* button, the CommServer displays the *Protocol Options* screen for this host. This screen varies depending on the type of emulation and protocol selected for the host.

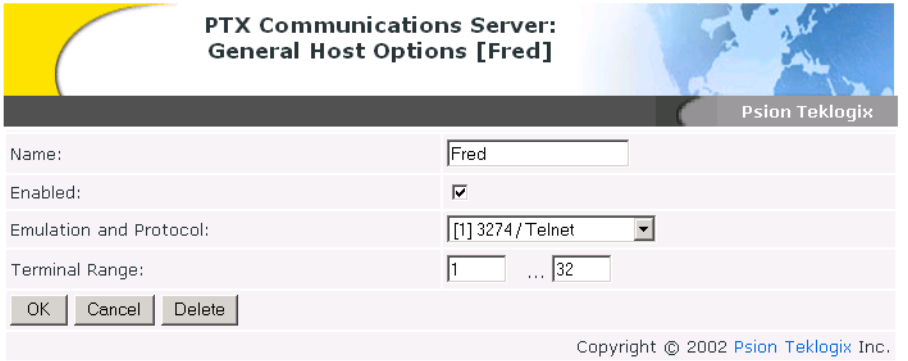
- Function Key Mappings

  When the user presses this *Configure* button, the CommServer displays the *Function Key Mapping* screen for this host. This screen varies depending on the type of emulation and protocol selected for the host.

There is also a *Main Menu* button. When the user presses this button, the CommServer displays the *Configuration Main Menu*.

C.2.2.3 General Host Options





In this screen, the user can select general options for this host connection. The host connection may also be deleted.

Protocols

Protocols are the methods by which terminals communicate with host computers. The CommServer supports the TCP/IP and SNA protocols.

Protocols can operate over various physical media such as Ethernet, Token Ring, synchronous serial, and asynchronous serial connections, as well as wireless radio-link connections.

Emulations

Working with Psion Teklogix terminals and base stations, the CommServer can emulate IBM model 3277, 3278-2, 5251-11, and 5555-B01 terminals, as well as ANSI terminals.

Only certain combinations of emulation and protocol are supported:

	TCP/IP	SNA
2392	yes	
3274	yes	yes
5250	yes	yes
ANSI	yes	

Name Textbox

Name: [ ]

Values: **<any text string>**

Default: **Unnamed Host**

This textbox allows the user to enter a name for the host.

Note: *The name must not contain space characters.*

Enabled Checkbox

Enabled: ☑

Values: **<selected>, <unselected>**

Default: <**selected>**

If this checkbox is selected, the CommServer will enable the connection to this host as it boots.

Emulation and Protocol Listbox

Emulation and Protocol: ▽

Values: **`Configure New, 3274/Telnet, 3274/SNA, 5250/Telnet, 5250/SNA, ANSI/Telnet, 9010/Telnet, 2392/Telnet, RF Modem/Telnet, HTML, Remote Sockets`**

Default: **`3274/Telnet`**

This listbox allows the user to select the emulation and protocol to be used for the connection to this host. Only certain combinations of emulation and protocol are available.

Terminal Range Textboxes

Terminal Range: [ ] ... [ ]

Values: **`<see text>`**

Default: **`1 ... 32`**

These textboxes allow the user to specify the range of terminals which will communicate with this host. The left-hand textbox contains the lowest terminal number which is allowed to communicate with the host; the right-hand textbox contains the highest terminal number.

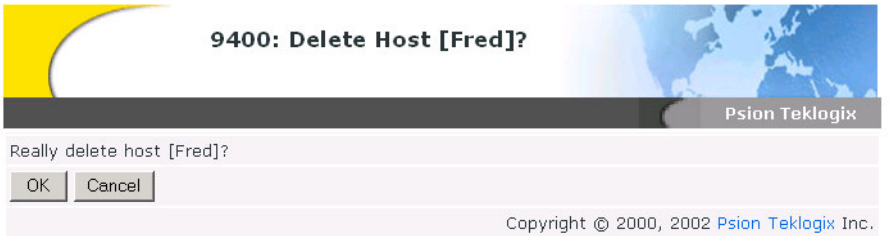
Terminal numbers may range from 1 to 3840.

Note: *The Model S900L software-only version of the CommServer can handle a maximum of 50 terminals, so its highest terminal number is 50.*

Delete Button

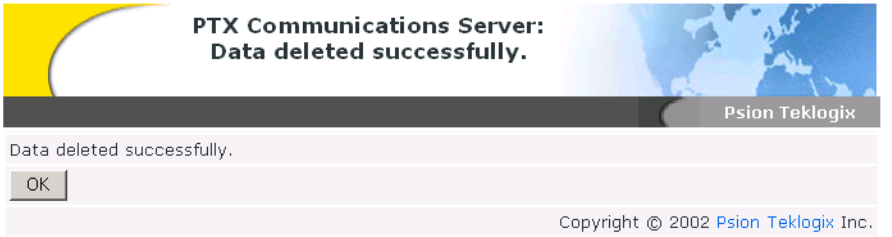
Delete

The *Delete* button allows the user to delete the currently-displayed host connection. When it is pressed, the CommServer displays a confirmation screen:



Note: *The screen shown here is the confirmation screen for deleting a host named Fred.*

If the user presses the *Cancel* button on this screen, the CommServer displays the *Configure Host* screen again. If the user presses the *OK* button, the CommServer removes the host connection's data from the configuration cache and displays a confirmation screen:



When the user presses the *OK* button in this confirmation screen, the CommServer displays the *Main Configuration* screen again. The choice for the deleted host connection is no longer present in the *Hosts* listbox.

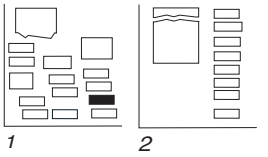
C.2.2.4 Emulation Options

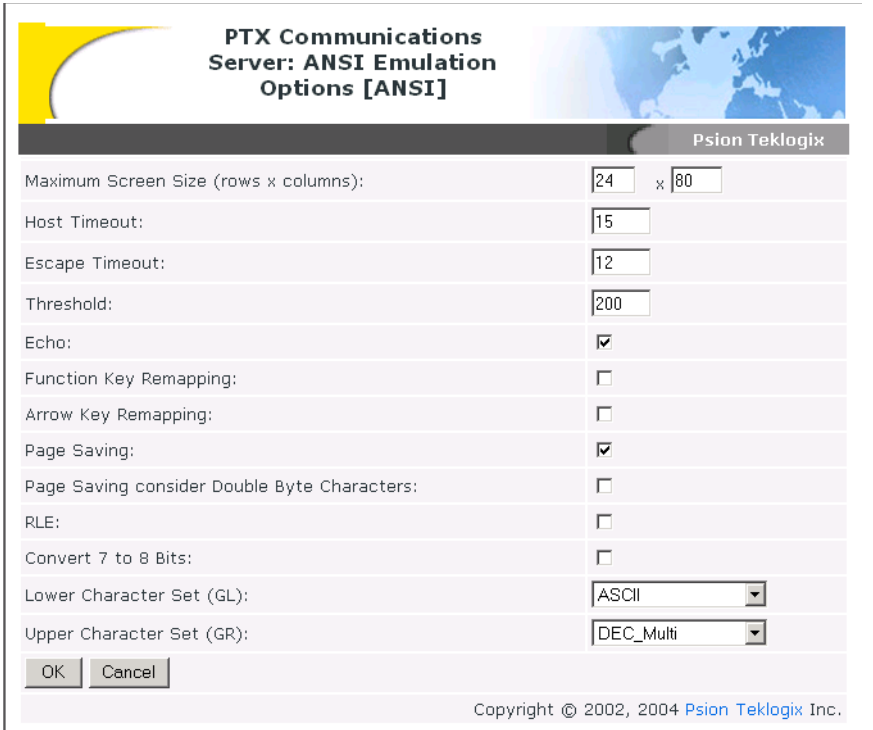
This screen differs depending on the type of emulation and protocol selected in the *General Host Options* screen. There are eight variants of this screen, one for each of the following emulation and protocol combinations:

- ANSI emulation (telnet protocol). See page C-27.
- 2392 emulation (telnet protocol). See page C-33.
- 3274 emulation (telnet or TESS protocols). See page C-49.
- 5250 emulation (telnet or TESS protocols). See page C-65.
- 9010 emulation (telnet protocol). See page C-81.
- RF Modem emulation (telnet protocol). See page C-82.
- HTML emulation (TCP/IP protocol). See page C-83.
- Remote Sockets emulation/protocol. See page C-87.

There are no configurable options for Remote Sockets.

The Emulation Options Screen (ANSI Emulation)





The CommServer displays this version of the *Emulation Options* screen after the user has selected the *ANSI/Telnet* emulation/protocol combination for this host connection.

Note: *The screen shown here gives the emulation options for a host named Gary.*

Maximum Screen Size (rows x columns) Textboxes

Maximum Screen Size (rows x columns): ☐ x ☐

Values: **`rows 1 - 24, columns 1 - 80`**

Default: **`24 x 80`**

These textboxes allow the user to specify the dimensions, in rows and columns, of the maximum terminal screen size.

Host Timeout Textbox

Host Timeout: [ ]

Values: `0 - 255`

Default: `15`

The *host timeout* is the interval (in 60ths of a second) between "bursts" of data received from the host.

If the CommServer does not receive any characters from the host after this timeout has elapsed, it assumes that the host has finished sending data and is waiting for user input (in other words, it assumes that a screen of data has been completed).

Escape Timeout Textbox

Escape Timeout: [ ]

Values: `0 - 255`

Default: `12`

The *escape timeout* is the length of time (in 60ths of a second) that the CommServer will "hang onto" an ESC received from the host, and consider the next received byte to be part of an escape sequence.

When this timeout has elapsed, the host will have to send another ESC character to start or continue an escape sequence.

Note: *This is especially important when an ESC is at the end of a data packet.*

Threshold Textbox

Threshold: [ ]

Values: `0 - 999`

Default: `200`

This textbox allows the user to enter a *threshold* value for the selected ANSI host connection.

The threshold is the minimum number of bytes of update data for the terminal screen which must be received from the host before the CommServer will store the screen as a new "saved page".

Important: ***The Page parameter (see page 30) must be enabled in order to change the value in the Threshold parameter.***

Echo Checkbox

Echo: ☑

Values: **<selected>, <unselected>**

Default: **<selected>**

If this checkbox is selected, the CommServer uses *smart-echo*.

Smart-echo reduces the amount of data sent to the terminal by decreasing the number of radio transmissions.

Ordinarily, when a character mode application is being used, each keystroke is sent to the host in one transmission, and the character is echoed by the host in another transmission.

When smart-echo is enabled, the CommServer will not send the host echo to the terminals if it matches the data sent from the terminal. Thus, the number of radio transmissions is reduced.

This mode also reduces or eliminates the delay between typing a character on the keyboard and displaying the character echoed by the host. The maximum number of characters waiting for echo is 25. Any additional characters will be sent to the host but not displayed.

Notes:

- *Terminals with the proper software version will respond to this query; older terminals will ignore it.*
- *This parameter also determines whether an ANSI parameter query is sent to the terminal.*
- *Smart-echo also needs to be enabled at the terminal (refer to the appropriate terminal user manual).*

Function Key Remapping Checkbox

Enabled: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer remaps the function keys for this host connection as defined in the *ANSI Function And Arrow Key Remappings* screen. See "Function Key Mapping" on page C-123.

Arrow Key Remapping Checkbox

Enabled: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer remaps the arrow keys for this host connection as defined in the *ANSI Function And Arrow Key Remappings* screen.See "Function Key Mapping" on page C-123.

Page Checkbox

Enabled: ☑

Values: **<selected>, <unselected>**

Default: **<selected>**

If this checkbox is selected, the CommServer uses page saving**,** reducing data transmitted to the terminals.

The CommServer maintains an image of each page stored at the terminal. After receiving an application screen, the CommServer tries to match the screen with a stored page. If the page is already in the terminal, the CommServer instructs the terminal to re-display its stored copy of the page; no data need be sent across the radio link for that page. If the CommServer finds no match for the page, the complete page is sent to the terminal.

Note: *When page saving is enabled, the number of saved pages is that which is set on the terminal. Refer to the appropriate terminal user manual for details.*

Page Saving Consider Double Byte Characters Checkbox

Page Saving consider Double Byte Characters: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

While using double byte character sets (for example, Chinese or Korean), the Page Saving function can cause a double byte character to be partially overwritten. This can cause unprintable screen data and unintended characters; and may cause the terminal to shift data on the screen. Selecting this checkbox causes a double byte character half to be replaced with a space, preventing problems with terminal screen displays.

Select this checkbox only when using double byte character sets.

RLE Checkbox

Enabled: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer uses run-length encoding (RLE) on the data it sends across the radio link.

RLE compresses repeated characters going from the host to the terminal. If repeated characters are found in the data stream, the first one is sent, followed by a short escape sequence (3 or 4 characters) which tells the terminal how many times to repeat this character. In this way RLE compresses the data and decreases the total amount of radio-link traffic.

Convert 7 To 8 Bits Checkbox

Enabled: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer converts 7-bit control sequences to their 8-bin equivalents in ANSI datastreams going to the terminals. This replaces 7-bit two-character escape sequences with a single equivalent 8-bit character, compressing the data. For example, the escape sequence **ESC [** is converted to **CSI**.

Lower Character Set (GL) Listbox

Lower Character Set (GL): ▽

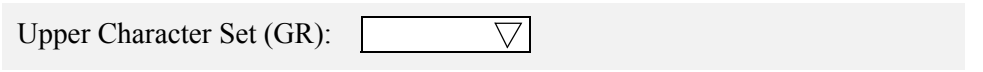
Values: **<see text>**

Default: **ASCII**

This listbox allows the user to select the character set to be used for the first 128 character codes (decimal 0 to 127, hex 00 to 7F).

Available character sets include:
ASCII, DEC Multi, DEC Graphical, British DEC, Danish DEC, Dutch DEC, Finnish DEC, French DEC, French CDN DEC, German DEC, Italian DEC, Portuagal DEC, Spanish DEC, Swedish DEC, Swiss DEC, Arabic, Thai, and a Not Listed selection.

Upper Character Set (GR) Listbox



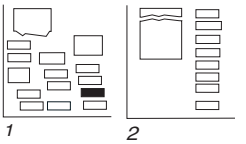
Values: **<see text>**

Default: **DEC_Multi**

This listbox allows the user to select the character set to be used for the second 128 character codes (decimal 128 to 255, hex 80 to FF).

Available character sets include:
ASCII, DEC Multi, DEC Graphical, British DEC, Danish DEC, Dutch DEC, Finnish DEC, French DEC, French CDN DEC, German DEC, Italian DEC, Portuagal DEC, Spanish DEC, Swedish DEC, Swiss DEC, Arabic, Thai, Latin 1, Latin 2, Latin 3, Latin 4, Latin 5, Latin 6, Cyrillic ISO, Arabic ISO, Greek ISO, Hebrew ISO, and Thai ISO.

The Emulation Options Screen (2392 Emulation)



PTX Communications Server:
2392 Emulation Options
[Elaine]

Psion Teklogix

2392 Options

Send CR with FKEY:	☐

TESS Options

Alarm:	☐
Clear:	☐
Passthru:	☐
Procedures:	☐
Local:	☐
TSF/O:	☐
Host Print:	☐
Remote Print:	☐
Pages:	8
Transmit Line:	0
AIAG:	0
Visible Match Character:	0
Hidden Match Character:	0
Serial I/O:	0
Print Line:	0
Print Form Length:	0
Barcode:	0
Entry Line:	0
Field Overhead:	5
Command Region:	0 , 0 - 0 , 0

OK Cancel

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The CommServer displays this version of the *Emulation Options* screen after the user has selected the *2392/Telnet* emulation/protocol combination for the host connection.

Note: *The screen shown here gives the emulation options for a host named Elaine.*

With HP 2392 emulation, the CommServer converts the application datastream from the host to TESS (TEklogix Screen Subsystem) commands. Some of the options in this screen govern this conversion of the host screens to TESS.

Send CR With FKEY Checkbox

Send CR with FKEY: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer sends a carriage-return after a function-key.

Alarm Checkbox

Alarm: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, terminals will beep when the word *ALARM* (in capital letters) appears on the application screen, in the location specified by the "Command Region" parameter (see page D-62). The word *ALARM* should be a *display-only* field.

Note: *The "Command Region" parameter must be enabled for this parameter to work.*

Clear Checkbox

Clear: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer creates an *empty* entry field for an entry field that is filled with spaces.

Some host applications rely on the video attributes of displayed characters to highlight fields, particularly entry fields. For example, the application screen may define all entry fields with reverse video and fill the field with spaces. This is effective on terminals that support reverse video, but on terminals that do not, it can make the field invisible since it is made up entirely of spaces.

By default, all empty entry fields displayed at the Psion Teklogix terminal are highlighted by the "entry character" chosen in the terminal's configuration (not all Psion Teklogix terminals support video attributes). The *Clear* feature creates an empty entry field in place of an entry field filled with spaces.

Note: *This operation is only performed on screens received **from the host.** Data sent **to the host** remains unaffected.*

Passthru Checkbox

Passthru: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer allows the host to send data directly to the RF terminal's serial port. This is most commonly used for printing.

Preparing Host Screens for Pass-Through

On the screen to be sent through the terminal serial port, the word ***PASSTHRU*** (in capital letters) has to appear on the first line, starting on the second column. The actual data to be sent to the terminal may start anywhere below the first line.

With 5250 or 3274 emulations, attributes occupy a position in the screen buffer. An attribute placed between column 2 and the end of the word "PASSTHRU" will 'push' all following characters one position to the right. Therefore, any required attributes should occupy column 1 of the first line (just preceding the word "PASSTHRU").

For example:

```
column: 1 2 3 4 5 6 7 8 9
line 1: @ P A S S T H R U @
line 2: @ P A R T :   1 2 3 4 5
```

where **@** *is an attribute.*

When the CommServer is finished sending the data to the terminal's printer, it will send an ENTER key to the host. The host must wait for the ENTER key before sending any more screens (including other PASSTHRU screens) to this terminal.

Note: *Refer to the Terminals User Manual for information about setting parameters on the terminal for pass-through.*

Procedures Checkbox

Procedures: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer is allowed to send TESS procedures to the terminals. A TESS procedure is a group of TESS commands that can be executed by the TESS *execute procedure* command.

Local Checkbox

Local: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer is allowed to provide pages to be loaded as local TESS procedures in the terminals.

The local procedures are selected from a menu at the terminal. The terminals can perform these procedures when they are offline. Later when the terminals are online, they send the results of these functions to the host.

Note: *The* Procedures *parameter also must be enabled for* Local *to work.*

TSF/O Checkbox

TSF/O: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer uses Psion Teklogix' Screen-Formatter/Optimizer software.

Host Print Checkbox

Host Print: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

When this parameter is enabled, the host can send extra data to the terminal's screens, and instruct the terminal to print it. This is in contrast to the Local Print feature, where the terminal makes the initial print request.

The text that is passed to the printer is formatted into the 24 x 80 application screen. If the host can initiate the print operation, the text is printed. The CommServer identifies the additional text as a print page by the presence of the word *PRINT* (in capital letters) beginning in the 2nd column of line 13 on the 24 x 80 screen. The word *PRINT* should be defined as *display-only text.*

The print page is positioned below the terminal's display page (see the following figure). The size of the print page is always the same as the terminal's display page (assuming that in the terminal's configuration, the page length is less than 12 lines).

When "Host Print" is enabled, the CommServer passes the print page to the terminal after receiving the application screen from the host.

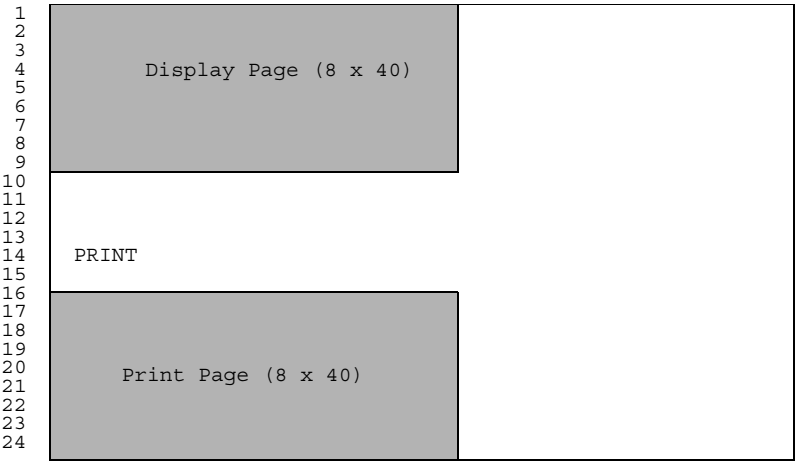


Figure C.1 Application Screen With Print Page

Notes:

- *Unlike with the "Passthru" option, when using "Host Print" no escape commands can be sent to the printer.*
- *Support for printing must be enabled at the terminal; refer to the appropriate terminal user manual for more information.*

Remote Print Checkbox

Remote Print: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

When this parameter is enabled, the CommServer sends the print page to a terminal whenever the terminal requests it (by sending the F17 function key from the terminal, or the *PRINT* key on older terminals). The CommServer sends the function response back to the host.

This is in contrast to Host Print, where the host makes the initial print request.

Note: *Support for printing must be enabled at the terminal; refer to the appropriate terminal user manual for more information.*

Pages Textbox

Pages: [ ]

Values: **0 - 79**

Default: **8**

The number of host screens (or pages) stored at the terminal.

The CommServer reduces data transmitted to the terminals by using the terminal's capability to store a page of data for each screen it displays. The CommServer maintains an image of each page stored at the terminal. After receiving an application screen, the CommServer tries to match the screen with a stored page.

If a similar page is already in the terminal's memory, the CommServer simply instructs the terminal to re-display its copy of the page; only the necessary changes are sent from the CommServer. If no match is found, the complete page is sent to the terminal over the radio link.

Note: *There is a corresponding parameter on the terminal itself, and the **actual** number of saved pages will be the **smaller** of the two values.*

Transmit Line Textbox

Transmit Line: [ ]

Values: **0 - 24**

Default: **<none>**

When this feature is enabled, all modified data at the terminal will be automatically transmitted when the operator enters data into a *transmit-upon- entry* field.

The value in this textbox specifies the line on the screen which is designated the *transmit line*. The last entry field above or on the transmit line on the screen will be identified as the transmit-upon-entry field. If any entry fields exist on lines below the transmit line, no entry field will be designated as the transmit-upon-entry field.

A value of 0 (zero) disables this feature.

A value of 2 causes the *last* entry field on each application screen to be defined as "transmit-upon-entry".

AIAG Textbox

AIAG: [ ]

Values: **0 - 127**

Default: **<none>**

This textbox contains the decimal value of the ASCII character code of the AIAG *mode character* as described below.

Whenever bar code data is entered at a terminal, the terminal searches for AIAG fields on the current page that can accept the bar code data. The data preloaded into the AIAG field by the application program determines whether the bar code data is accepted. The format of the preloaded data is:

<mode><AIAG prefix>

The application program distinguishes an entry field as AIAG by preceding the field with a special *mode character* which denotes the existence of AIAG fields on the host screen. This character is entered as an ASCII value.

The mode character is derived by starting with the decimal value 48 (ASCII character '0') and adding the appropriate value from the table below.

Code	Meaning of Code
1	**Prevent the AIAG prefix from being displayed.**
2	**Prevent the AIAG prefix from being sent to the host.**
4	**Cause a transmission to the host when all AIAG fields with this mode set are filled. The transmission is sent by a Function 0 (F0) code.**
8	**Allow overwriting of previously entered data.**
16	**Start the search for a matching AIAG field at the current cursor position. Otherwise, the cursor will start at the top of the page.**

Table C.2 Mode values for the AIAG fields

For example, the '**@**' symbol is used to apply the cursor matching function, since adding 16 to 48 results in decimal value 64, which is the ASCII value for the character '**@**'. A value of 0 (zero) disables this feature.

Visible Match Character Textbox

Visible Match Character: [ ]

Values: **0 - 127**

Default: **<none>**

With field matching, the host computer preloads data into an entry field. Now the terminal operator can make an entry that matches this preloaded data. For visible match fields, the preloaded data will be displayed in the entry field at the operator's terminal.

The application program distinguishes an entry field as a *match field* by preceding it with a special character.

The special character is entered as the decimal character code for one of the first 127 ASCII characters.

A value of 0 (zero) disables this match field feature.

For example, assume that the ">" character (ASCII decimal character code 62) is defined for visible match fields. This character must immediately precede the entry field:

```
Part #>_______
```

The field: `Part #>` includes the character > and is followed by the part number entry field on the screen. If any other character was chosen as the last character of the text, the entry field would not be a match field.

The preloaded data sent to a terminal may consist of the exact characters, special match characters or a combination of the two. The match characters recognized by the Psion Teklogix terminals are shown in the table below.

For example, suppose you wish to preload an entry field with a part number. If the exact part number is known, you may simply preload the field with that part number. If more flexibility is required, and part numbers always begin with two alphabetic characters followed by a hyphen character and four digits, then the match string for the field could be: `&&-####`.

If an entry is different from the preloaded data, the entry will be displayed, the terminal will beep and the cursor will be in the first position of the match field.

Now either another entry in the match field can be made or the cursor can be moved to a new field. When an entry (even if it doesn't match the host's preloaded data) is made in a match field, this entry will be sent to the host as part of the terminal's modified data during the next transmission.

Match Character	Use
#	**match a number**
&	**match a letter (either case)**
^	**match an upper case letter**
_	**match a lower case letter**
|	**match an alphanumeric character**
"	**match a letter, number or space**
?	**match a punctuation character**
'	**match any character**
:	**match all character positions in the field with the preceding character**
;	**match any remaining characters, but not necessarily the remainder of the field, with the preceding character**

Table C.3 Match Characters

Hidden Match Character Textbox

Hidden Match Character: [ ]

Values: **0 - 127**

Default: **<none>**

A special character is used to mark *Hidden Match* fields in a TESS screen. This character precedes the field contents of the Hidden Match field. In hidden-match fields, as opposed to visible-match fields, the preloaded entry is not displayed in the entry field at the operator's terminal).

This textbox allows the user to enter the decimal representation of the ASCII character code of this special character.

A value of 0 (zero) disables this feature.

Serial I/O Textbox

Serial I/O: [ ]

Values: **0 - 127**

Default: **<none>**

Serial I/O fields are special entry and fixed fields that accept input from and output to a serial port. The application program distinguishes this field as *Serial I/O* by preceding the field with a special character.

If this character precedes a fixed field, the data will be sent to the terminal's serial port. If it precedes an entry field, the field accepts data from the terminal's serial port.

This textbox contains the decimal representation of the ASCII character-code of this special character.

A value of 0 (zero) disables this feature.

Print Line Textbox

Print Line: [ ]

Values: **0 - 24**

Default: **<none>**

This textbox allows the user to enter the starting line number of the print page in the application screen.

A value of 1 (one) causes the display page to be printed. A value of 0 (zero) disables this feature.

Print Form Length Textbox

Print Line: [ ]

Values: **0 - 24**

Default: **<none>**

This textbox allows the user to enter the printer's form length in lines.

Barcode Textbox

Barcode: [ ]

Values: **0-127**

Default: **<none>**

Barcode-input-only fields are special entry fields that only accept input from a bar code reader. The application program distinguishes an entry field as *barcode-input-only* by preceding the field with a special character.

This textbox contains the decimal representation of the ASCII character code of this special character.

A value of 0 (zero) disables this feature.

Entry Line Textbox

Entry Line: [ ]

Values: **0 - 24**

Default: **<none>**

This textbox contains the number of the first line displayed if there is no entry field in the upper-left portion of the screen and if an entry field is at or below this line.

The *Entry Line* parameter allows an automatic offset within the host screen, so that the area displayed by the terminal includes an entry field that would normally be out of bounds. Normally, Psion Teklogix terminals only display the upper left corner of the application screen because of their smaller display size.

Field Overhead Textbox

Field Overhead: [ ]

Values: `0 - 80`

Default: `5`

This textbox contains the maximum number of characters allowed between two *fixed* fields which still allows the CommServer to join them into one field.

Sometimes the CommServer will join two adjacent fixed fields and then send them as one field. This reduces the overhead on the radio link.

For example, if two fields were 4 characters apart and this parameter was 5, then these fields would be joined into one.

This feature affects fields with the "Normal" display attribute only.

Command Region Textboxes

Command Region: [ ] , [ ] - [ ] , [ ]

Values: `row values: 0-24; column values: 0-80`

Default: `<none>`

These two pairs of textboxes define a region of the host screen which the CommServer will examine for the presence of reserved commands. The first textbox of each pair contains the row number; the second contains the column number.

These four numbers represent the row and column addresses of the upper left corner and the lower right corner of the command region. To define the last two lines of the host screen as the command region, for example, enter the values *23, 1* and *24, 80*.

Currently, the only commands supported in the command region are *ALARM* and *FONT*:

- When the word *ALARM* is placed anywhere within the command region, the CommServer will send a TESS *beep* command to the terminal.
- When the word *FONT* is placed anywhere within the command region, and followed by a number (the *font code*), the CommServer will send the appropriate TESS Change Font command to the terminal.

Psion Teklogix terminals use the font code to specify what font to use. See "Fonts And Font Codes" on page E-45 for a listing of fonts and font codes.

Fonts And Font Codes

Many Psion Teklogix terminals use a font code to specify what font to use. These font codes can be sent to the terminal by placing FONT, followed by the code, in the command region. The font code can be expressed as a decimal number or as a TESS representation of a decimal number.

When a valid FONT statement is found in the command region, the font code is stored with the page. When that page is sent to the terminal, an appropriate TESS Change Font command is also sent to the terminal, causing the terminal to use the specified font, if available.

The following font code table gives:

- the font code of each font,
- its size in pixels (width x height),

and, for each terminal type:

- the number of rows displayed on the terminal,
- the number of characters (columns) in each row on that terminal.

If the font code is out of range it will cause a debug warning to be displayed and the command will be ignored. If the terminal debug level is level 4 or greater valid font change requests will be detailed.

Note: *See the TESS Manual for more details.*

Font Code	Pixel Size	Row x Column Size			
		7035	8255VFD	8255LCD	8260/EL
0	alias NORMAL	loads median available font size *			
1	alias SMALL	loads font with size nearest to halfway between NORMAL and TINY*			
2	alias LARGE	loads font with size nearest to halfway between NORMAL and HUGE*			
3	alias TINY	loads smallest available font size*			
4	alias HUGE	loads largest available font size*			
5	5x8	18x32	10x51	25x128	60x128
6	6x8	18x26	10x42	25x106	60x106
7	7x8	historic (loads closest match)			
8	8x8	18x20	10x32	25x80	60x80
9	8x16	9x20 **	5x32	12x80	30x80
10	8x19	historic (loads closest match)			
11	16x32	historic (loads closest match)			
12	8x12	12x20 **	6x32	16x80	40x80
13	6x12	historic (loads closest match)			
14	10x24	historic (loads closest match)			
15	16x24	historic (loads closest match)			
16	12x20	7x13 **	4x21	10x53	24x53
17	10x12	12x16 **	6x25	16x64	40x64
18	12x12	12x13 **	6x21	16x53	40x53
19	16x12	12x10 **	6x16	16x40	40x40
20	16x20	7x10 **	4x16	10x40	24x40
21	16x25	5x10 **	3x16	8x40	19x40
22	8x18	8x20	4x32	11x80	26x80
23	16x16	historic (loads closest match)			

Table C.4 Complete Font Code List

24	26x26 Big 5 Chinese **	8x20 **	4x32 **	11x80 **	25x80 **
25	DBCS	loads current DBCS font, or NORMAL if no DBCS font found			
26	11x17	8x14 **	4x23	11x58	28x58
27	16x30	4x10 **	2x16	6x40	16x40
28	10x21 Thai	6x16	3x25	9x64	22x64
29	12x32 Thai	4x13 **	2x21	6x53	15x53
30	24x24 Korean **	9x20 **	5x32 **	12x80 **	25x80 **
31	16x16 Big 5 Chinese**	10x10 **	5x16 **	12x40 **	25x40 **
32	16x16 Korean **	10x10 **	5x16 **	12x40 **	25x40 **
33	20x20	7x8 **	4x12	10x32	24x32
34	6x14	10x26	5x42 **	14x106 **	34x106 **
35	16x16 Simplified Chinese **	10x10 **	5x16 **	12x40 **	25x40 **
36	5x12	12x32	6x51 **	16x128 **	40x128 **
37	8x14	10x20	5x32 **	14x80 **	34x80 **
38	20x29 Arabic	- **	- **	- **	- **
39	7x9	16x22	8x36 **	22x91 **	53x91 **
40	12x12 Korean **	12x13 **	6x21 **	16x53 **	40x53 **
41	12x11 Korean **	13x13 **	7x21 **	18x53 **	45x53 **
42	12x12 Simplified Chinese **	12x13 **	6x21 **	16x53 **	40x53 **
43	12x12 Big 5 Chinese**	12x13 **	6x21 **	16x53 **	40x53 **
44	24x24 Simplified Chinese **	9x20 **	5x32 **	12x80 **	25x80 **

Table C.4 Complete Font Code List

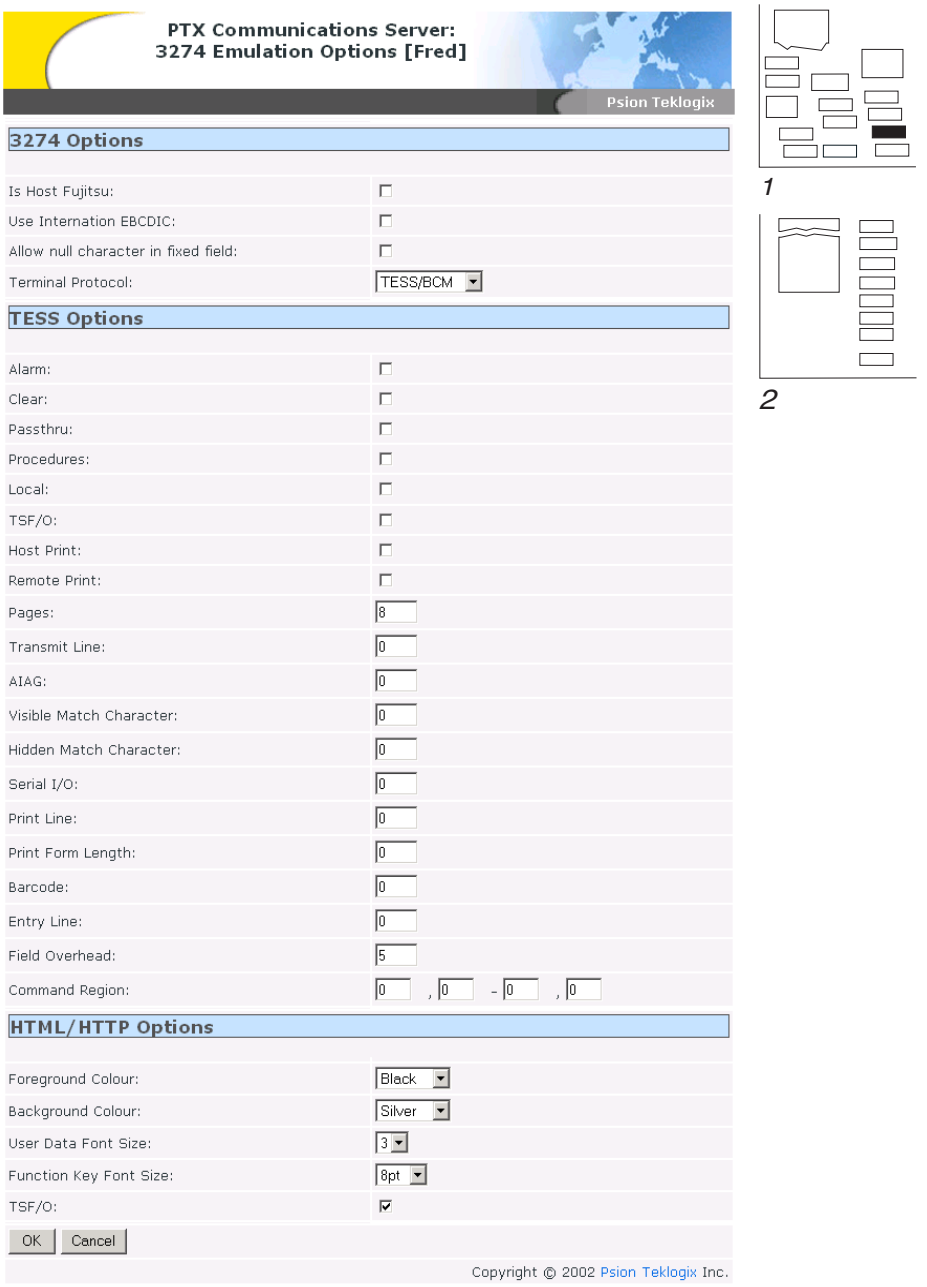
* By default the aliases are set to:

Font Code	Pixel Size	Row x Column Size			
		7035	8255VFD	8255LCD	8260/EL
0	alias NORMAL	18x32 (5)	10x32 (8)	25x80 (8)	30x80 (9)
1	alias SMALL	18x32 (5)	10x42 (6)	25x80 (8)	30x80 (9)
2	alias LARGE	10x26 (34)	10x32 (8)	11x80 (22)	26x80 (22)
3	alias TINY	18x32 (5)	10x32 (8)	25x80 (8)	60x80 (8)
4	alias HUGE	8x20 (22)	5x32 (9)	16x40 (19)	19x40 (21)

Table C.5 Default Font Aliases

** Not included in the international standard build.

The Emulation Options Screen (3274 Emulation)



The CommServer displays this version of the *Emulation Options* screen after the user has selected the *3274/Telnet* or the *3274/TESS* emulation/protocol combination for the host connection.

Note: *The screen shown here gives the emulation options for a host named Fred.*

With IBM 3274, or IBM 5250 emulation, the CommServer converts the application datastream from the host to TESS (TEklogix Screen Subsystem) or HTML (HyperText Markup language) data. Some of the options in this screen govern this conversion of the host screens to TESS or HTML.

Is Host Fujitsu Checkbox

Is Host Fujitsu: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer sends its data in Fujitsu format.

Enabling this parameter causes the standard IBM formatting codes (for start of field, setting buffers, etc.) to be replaced by the codes used by Fujitsu host computers.

Use International EBCDIC Checkbox

Use International EBCDIC: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer uses the 'international' EBCDIC character set, swapping the positions of the **!** and **]** characters.

Terminal Protocol Listbox

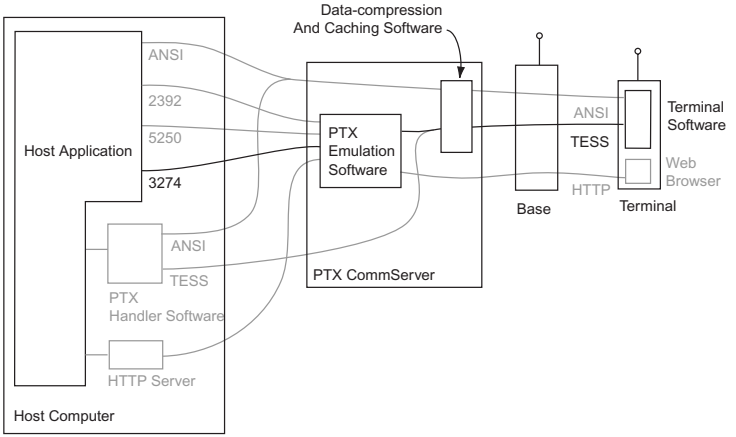
Terminal Protocol: ▽

Values: **TESS/BCM, HTML/HTTP**

Default: **TESS/BCM**

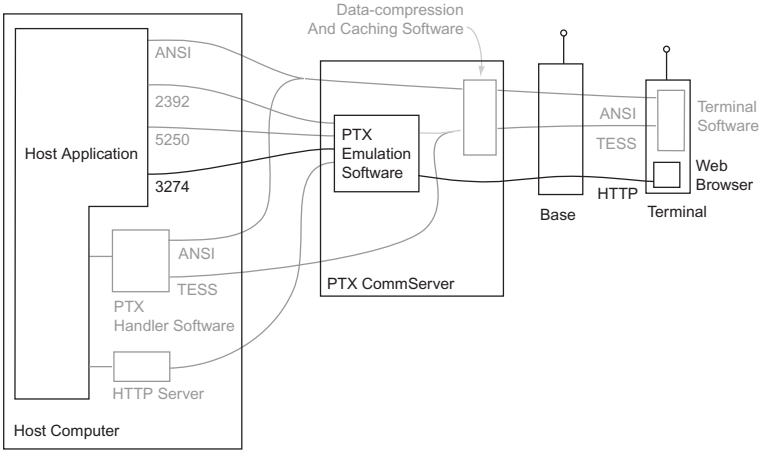
This listbox allows the user to select the protocol to be used for the connection between the terminal and the CommServer. Terminals may connect through TESS or HTTP.

Connecting Through TESS



Terminals connecting through TESS take advantage of the CommServer's data-caching and page-saving software.

Connecting Through HTTP



Terminals connecting through HTTP make use of an HTTP server in the CommServer. The web browser on the terminal should be directed to the standard HTTP port (port 80) on the CommServer.

Alarm Checkbox

Alarm: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, terminals will beep when the word *ALARM* (in capital letters) appears on the application screen, in the location specified by the "Command Region" parameter (see page D-62). The word *ALARM* should be a *display-only* field.

Note: *The "Command Region" parameter must be enabled for this parameter to work.*

Clear Checkbox

Clear: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer creates an *empty* entry field for an entry field that is filled with spaces.

Some host applications rely on the video attributes of displayed characters to highlight fields, particularly entry fields. For example, the application screen may define all entry fields with reverse video and fill the field with spaces. This is effective on terminals that support reverse video, but on terminals that do not, it can make the field invisible since it is made up entirely of spaces.

By default, all empty entry fields displayed at the Psion Teklogix terminal are highlighted by the "entry character" chosen in the terminal's configuration (not all Psion Teklogix terminals support video attributes). The *Clear* feature creates an empty entry field in place of an entry field filled with spaces.

Note: *This operation is only performed on screens received **from the host.** Data sent **to the host** remains unaffected.*

Passthru Checkbox

Passthru: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer allows the host to send data directly to the RF terminal's serial port. This is most commonly used for printing.

Preparing Host Screens for Pass-Through

On the screen to be sent through the terminal serial port, the word ***PASSTHRU*** (in capital letters) has to appear on the first line, starting on the second column. The actual data to be sent to the terminal may start anywhere below the first line.

With 5250 or 3274 emulations, attributes occupy a position in the screen buffer. An attribute placed between column 2 and the end of the word "PASSTHRU" will 'push' all following characters one position to the right. Therefore, any required attributes should occupy column 1 of the first line (just preceding the word "PASSTHRU").

For example:

```
column: 1 2 3 4 5 6 7 8 9
line 1: @ P A S S T H R U @
line 2: @ P A R T :   1 2 3 4 5
```

where **@** *is an attribute.*

When the CommServer is finished sending the data to the terminal's printer, it will send an ENTER key to the host. The host must wait for the ENTER key before sending any more screens (including other PASSTHRU screens) to this terminal.

Note: *Refer to the Terminals User Manual for information about setting parameters on the terminal for pass-through.*

Procedures Checkbox

Procedures: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer is allowed to send TESS procedures to the terminals. A TESS procedure is a group of TESS commands that can be executed by the TESS *execute procedure* command.

Local Checkbox

Local: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer is allowed to provide pages to be loaded as local TESS procedures in the terminals.

The local procedures are selected from a menu at the terminal. The terminals can perform these procedures when they are offline. Later when the terminals are online, they send the results of these functions to the host.

Note: *The* Procedures *parameter also must be enabled for* Local *to work.*

TSF/O Checkbox

TSF/O: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer uses Psion Teklogix' Screen-Formatter/Optimizer software.

Host Print Checkbox

Host Print: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

When this parameter is enabled, the host can send extra data to the terminal's screens, and instruct the terminal to print it. This is in contrast to the Local Print feature, where the terminal makes the initial print request.

The text that is passed to the printer is formatted into the 24 x 80 application screen. If the host can initiate the print operation, the text is printed. The CommServer identifies the additional text as a print page by the presence of the word *PRINT* (in capital letters) beginning in the 2nd column of line 13 on the 24 x 80 screen. The word *PRINT* should be defined as *display-only text.*

The print page is positioned below the terminal's display page (see the following figure). The size of the print page is always the same as the terminal's display page (assuming that in the terminal's configuration, the page length is less than 12 lines).

When "Host Print" is enabled, the CommServer passes the print page to the terminal after receiving the application screen from the host.

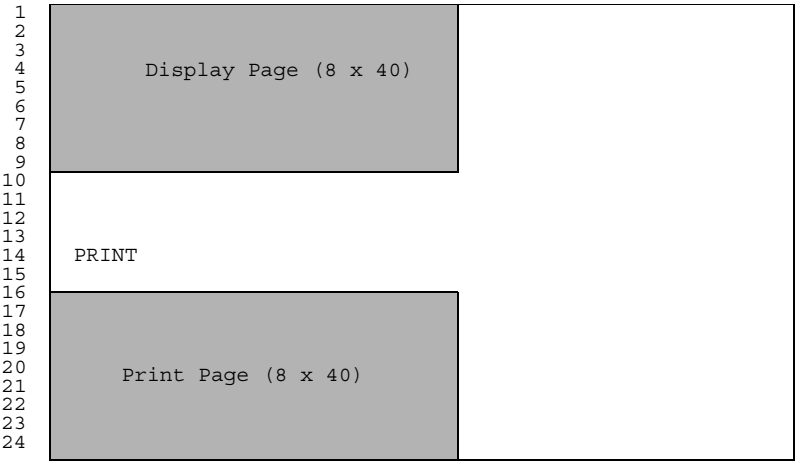


Figure C.6 Application Screen With Print Page

Notes:

1. *Unlike with the "Passthru" option, when using "Host Print" no escape commands can be sent to the printer.*
2. *Support for printing must be enabled at the terminal; refer to the appropriate terminal user manual for more information.*

Remote Print Checkbox

Remote Print: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

When this parameter is enabled, the CommServer sends the print page to a terminal whenever the terminal requests it (by sending the F17 function key from the terminal, or the *PRINT* key on older terminals). The CommServer sends the function response back to the host.

This is in contrast to Host Print, where the host makes the initial print request.

Note: *Support for printing must be enabled at the terminal; refer to the appropriate terminal user manual for more information.*

Pages Textbox

Pages: [ ]

Values: **0 - 79**

Default: **8**

The number of host screens (or pages) stored at the terminal.

The CommServer reduces data transmitted to the terminals by using the terminal's capability to store a page of data for each screen it displays. The CommServer maintains an image of each page stored at the terminal. After receiving an application screen, the CommServer tries to match the screen with a stored page.

If a similar page is already in the terminal's memory, the CommServer simply instructs the terminal to re-display its copy of the page; only the necessary changes are sent from the CommServer. If no match is found, the complete page is sent to the terminal over the radio link.

Note: *There is a corresponding parameter on the terminal itself, and the **actual** number of saved pages will be the **smaller** of the two values.*

Transmit Line Textbox

Transmit Line:

Values: **0 - 24**

Default: **<none>**

When this feature is enabled, all modified data at the terminal will be automatically transmitted when the operator enters data into a *transmit-upon- entry* field.

The value in this textbox specifies the line on the screen which is designated the *transmit line*. The last entry field above or on the transmit line on the screen will be identified as the transmit-upon-entry field. If any entry fields exist on lines below the transmit line, no entry field will be designated as the transmit-upon-entry field.

A value of 0 (zero) disables this feature. A value of 2 causes the *last* entry field on each application screen to be defined as "transmit-upon-entry".

AIAG Textbox

AIAG:

Values: **0 - 127**

Default: **<none>**

This textbox contains the decimal value of the ASCII character code of the AIAG *mode character* as described below.

Whenever bar code data is entered at a terminal, the terminal searches for AIAG fields on the current page that can accept the bar code data. The data preloaded into the AIAG field by the application program determines whether the bar code data is accepted. The format of the preloaded data is:

<mode><AIAG prefix>

The application program distinguishes an entry field as AIAG by preceding the field with a special *mode character* which denotes the existence of AIAG fields on the host screen. This character is entered as an ASCII value.

The mode character is derived by starting with the decimal value 48 (ASCII character '0') and adding the appropriate value from the table below.

Code	Meaning of Code
1	**Prevent the AIAG prefix from being displayed.**
2	**Prevent the AIAG prefix from being sent to the host.**
4	**Cause a transmission to the host when all AIAG fields with this mode set are filled. The transmission is sent by a Function 0 (F0) code.**
8	**Allow overwriting of previously entered data.**
16	**Start the search for a matching AIAG field at the current cursor position. Otherwise, the cursor will start at the top of the page.**

Table C.7 Mode values for the AIAG fields

For example, the '**@**' symbol is used to apply the cursor matching function, since adding 16 to 48 results in decimal value 64, which is the ASCII value for the character '**@**'. A value of 0 (zero) disables this feature.

Visible Match Character Textbox

Visible Match Character: [ ]

Values: **0 - 127**

Default: **<none>**

With field matching, the host computer preloads data into an entry field. The terminal operator can make an entry that matches this preloaded data. For visible match fields, the preloaded data will be displayed in the entry field at the operator's terminal.

The application program distinguishes an entry field as a *match field* by preceding it with a special character. The special character is entered as the decimal character code for one of the first 127 ASCII characters.

An entered value of 0 (zero) disables this match field feature.

For example, assume that the ">" character (ASCII decimal character code 62) is defined for visible match fields. This character must immediately precede the entry field:

```
Part #>_______
```

The field: `Part #>` includes the character > and is followed by the part number entry field on the screen. If any other character was chosen as the last character of the text, the entry field would not be a match field.

The preloaded data sent to a terminal may consist of the exact characters, special match characters or a combination of the two. The match characters recognized by the Psion Teklogix terminals are shown in the table below.

For example, suppose you wish to preload an entry field with a part number. If the exact part number is known, you may simply preload the field with that part number. If more flexibility is required, and part numbers always begin with two alphabetic characters followed by a hyphen character and four digits, then the match string for the field could be: `&&-####`.

If an entry is different from the preloaded data, the entry will be displayed, the terminal will beep and the cursor will be in the first position of the match field.

Now either another entry in the match field can be made or the cursor can be moved to a new field. When an entry (even if it doesn't match the host's preloaded data) is made in a match field, this entry will be sent to the host as part of the terminal's modified data during the next transmission.

Match Character	Use
#	**match a number**
&	**match a letter (either case)**
^	**match an upper case letter**
_	**match a lower case letter**
|	**match an alphanumeric character**
"	**match a letter, number or space**
?	**match a punctuation character**
'	**match any character**
:	**match all character positions in the field with the preceding character**
;	**match any remaining characters, but not necessarily the remainder of the field, with the preceding character**

Table C.8 Match Characters

Hidden Match Character Textbox

Values: **0 - 127**

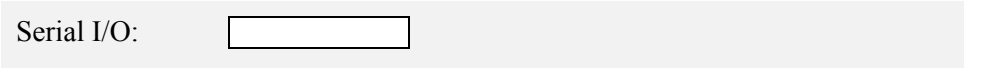
Default: **<none>**

A special character is used to mark *Hidden Match* fields in a TESS screen. This character precedes the field contents of the Hidden Match field. In hidden-match fields, as opposed to visible-match fields, the preloaded entry is not displayed in the entry field at the operator's terminal).

This textbox allows the user to enter the decimal representation of the ASCII character code of this special character.

A value of 0 (zero) disables this feature.

Serial I/O Textbox



Values: **0 - 127**

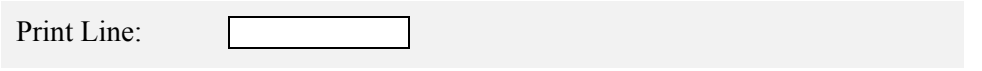
Default: **<none>**

Serial I/O fields are special entry and fixed fields that accept input from and output to a serial port. The application program distinguishes this field as *Serial I/O* by preceding the field with a special character.

If this character precedes a fixed field, the data will be sent to the terminal's serial port. If it precedes an entry field, the field accepts data from the terminal's serial port.

This textbox contains the decimal representation of the ASCII character-code of this special character. A value of 0 (zero) disables this feature.

Print Line Textbox



Values: **0 - 24**

Default: **<none>**

This textbox allows the user to enter the starting line number of the print page in the application screen.

A value of 1 (one) causes the display page to be printed. A value of 0 (zero) disables this feature.

Print Form Length Textbox

Print Line: [ ]

Values: **0 - 24**

Default: **<none>**

This textbox allows the user to enter the printer's form length in lines.

Barcode Textbox

Barcode: [ ]

Values: **0-127**

Default: **<none>**

Barcode-input-only fields are special entry fields that only accept input from a bar code reader. The application program distinguishes an entry field as *barcode-input-only* by preceding the field with a special character.

This textbox contains the decimal representation of the ASCII character code of this special character.

A value of 0 (zero) disables this feature.

Entry Line Textbox

Entry Line: [ ]

Values: **0 - 24**

Default: **<none>**

This textbox contains the number of the first line displayed if there is no entry field in the upper-left portion of the screen and if an entry field is at or below this line.

The *Entry Line* parameter allows an automatic offset within the host screen, so that the area displayed by the terminal includes an entry field that would normally be out of bounds. Normally, Psion Teklogix terminals only display the upper left corner of the application screen because of their smaller display size.

Field Overhead Textbox

Field Overhead: [ ]

Values: `0 - 80`

Default: `5`

This textbox contains the maximum number of characters allowed between two *fixed* fields which still allows the CommServer to join them into one field.

Sometimes the CommServer will join two adjacent fixed fields and then send them as one field. This reduces the overhead on the radio link.

For example, if two fields were 4 characters apart and this parameter was 5, then these fields would be joined into one.

This feature affects fields with the "Normal" display attribute only.

Command Region Textboxes

Command Region: [ ] , [ ] - [ ] , [ ]

Values: `row values: 0-24; column values: 0-80`

Default: `<none>`

These two pairs of textboxes define a region of the host screen which the CommServer will examine for the presence of reserved commands. The first textbox of each pair contains the row number; the second contains the column number.

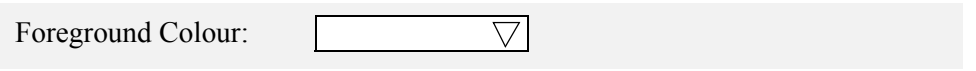
These four numbers represent the row and column addresses of the upper left corner and the lower right corner of the command region. To define the last two lines of the host screen as the command region, for example, enter the values *23, 1* and *24, 80*.

Currently, the only commands supported in the command region are *ALARM* and *FONT*:

- When the word *ALARM* is placed anywhere within the command region, the CommServer will send a TESS *beep* command to the terminal.
- When the word *FONT* is placed anywhere within the command region, and followed by a number (the *font code*), the CommServer will send the appropriate TESS Change Font command to the terminal.

Psion Teklogix terminals use the font code to specify what font to use. See "Fonts And Font Codes" on page E-45 for a listing of fonts and font codes.

Foreground Colour Listbox



Values: **Aqua, Black, Blue, Fuschia, Gray, Green, Lime, Maroon, Navy, Olive, Purple, Red, Silver, Teal, White, Yellow**

Default: **Black**

This listbox allows the user to select the 'foreground colour', the colour of the text, that the CommServer's HTTP server will send to terminals connecting via HTTP. The choices are the 16 predefined HTML colour names.

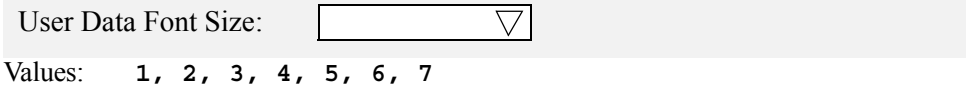
Background Colour Listbox

Values: **Aqua, Black, Blue, Fuschia, Gray, Green, Lime, Maroon, Navy, Olive, Purple, Red, Silver, Teal, White, Yellow**

Default: **Silver**

This listbox allows the user to select the 'background colour', the colour of the HTML page, that the CommServer's HTTP server will send to terminals connecting via HTTP. The choices are the 16 predefined HTML colour names.

User Data Font Size Listbox

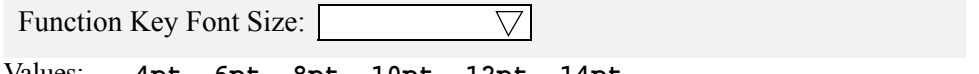


Values: **1, 2, 3, 4, 5, 6, 7**

Default: **3**

This listbox allows the user to select the size of the font in which user data will be presented to the terminals'web browser.

Function Key Font Size Listbox



Values: **4pt, 6pt, 8pt, 10pt, 12pt, 14pt**

Default: **8pt**

This listbox allows the user to select the protocol to be used for the connection between the terminal and the CommServer. Terminals may connect through TESS or HTTP.

TSF/O Checkbox

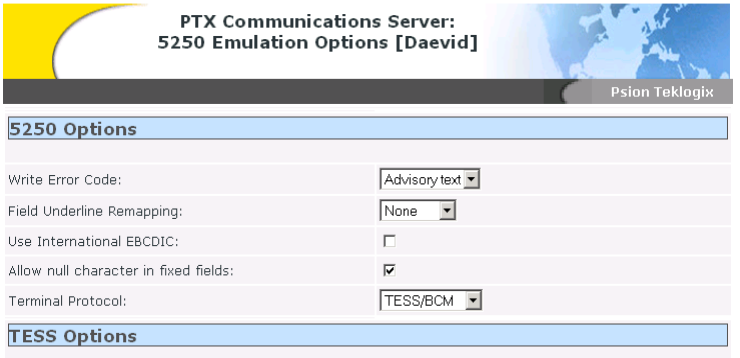
TSF/O: ☐

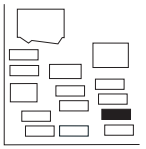
Values: **<selected>, <unselected>**

Default: **<unselected>**

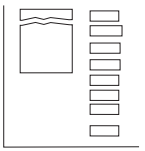
If this checkbox is selected, the CommServer uses Psion Teklogix' Screen-Formatter/Optimizer software.

The Emulation Options Screen (5250 Emulation)





1



2

The CommServer displays this version of the *Emulation Options* screen after the user has selected the *5250/Telnet* or *5250/TESS* emulation/protocol combinations for this host connection.

Note: *The screen shown here gives the emulation options for a host named Fred.*

With IBM 3274, or IBM 5250 emulation, the CommServer converts the application datastream from the host to TESS (TEklogix Screen Subsystem) or HTML (HyperText Markup language) data. Some of the options in this screen govern this conversion of the host screens to TESS or HTML.

Write Error Code Listbox

Write Error Code: ▽

Values: **advisory text, screen text**

Default: **advisory text**

If *advisory text* is selected here, the CommServer sends error codes to the terminal screen as advisory text, which is written at the bottom of the screen. If *screen text* is chosen, the CommServer sends the error codes as regular screen text.

Field Underline Remapping Listbox

Field Underline Remapping: ▽

Values: **None, Blink, Bold, Reverse**

Default: **None**

This listbox allows the user to select how the CommServer renders underlined fields sent from the host.

Use International EBCDIC Checkbox

Use International EBCDIC: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer will swap the positions of the **!** and **]** characters in the EBCDIC character table.

Terminal Protocol Listbox

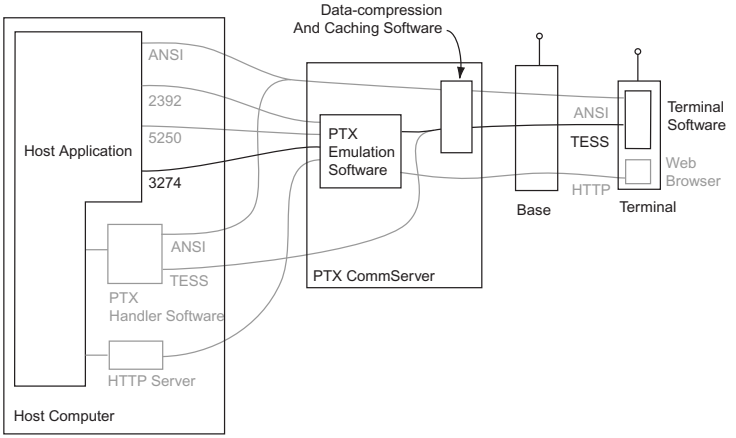
Terminal Protocol: ▽

Values: **`TESS/BCM, HTML/HTTP`**

Default: **`TESS/BCM`**

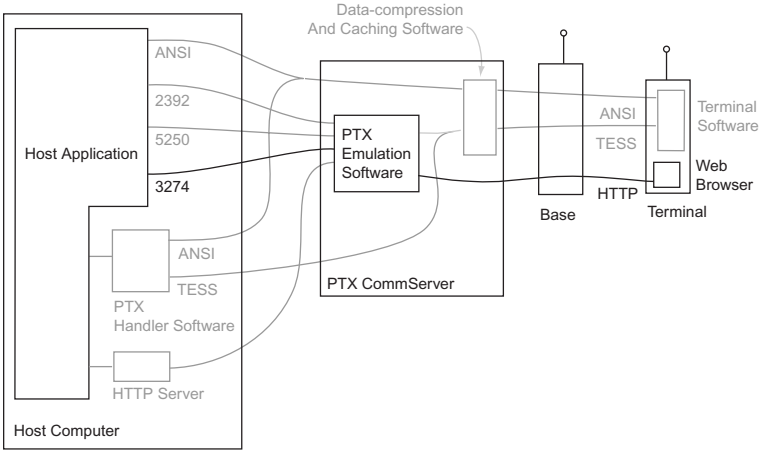
This listbox allows the user to select the protocol to be used for the connection between the terminal and the CommServer. Terminals may connect through TESS or HTTP.

Connecting Through TESS



Terminals connecting through TESS take advantage of the CommServer's data-caching and page-saving software.

Connecting Through HTTP



Terminals connectig through HTTP make use of an HTTP server in the CommServer's emulation software. The web browser on the terminal should be directed to the standard HTTP port (port 80) on the CommServer.

Alarm Checkbox

Alarm: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, terminals will beep when the word *ALARM* (in capital letters) appears on the application screen, in the location specified by the "Command Region" parameter (see page C-62). The word *ALARM* should be a *display-only* field.

Note: *The "Command Region" parameter must be enabled for this parameter to work.*

Clear Checkbox

Clear: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer creates an *empty* entry field for an entry field that is filled with spaces.

Some host applications rely on the video attributes of displayed characters to highlight fields, particularly entry fields. For example, the application screen may define all entry fields with reverse video and fill the field with spaces. This is effective on terminals that support reverse video, but on terminals that do not, it can make the field invisible since it is made up entirely of spaces.

By default, all empty entry fields displayed at the Psion Teklogix terminal are highlighted by the "entry character" chosen in the terminal's configuration (not all Psion Teklogix terminals support video attributes). The *Clear* feature creates an empty entry field in place of an entry field filled with spaces.

Note: *This operation is only performed on screens received **from the host.** Data sent **to the host** remains unaffected.*

Passthru Checkbox

Passthru: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer allows the host to send data directly to the RF terminal's serial port. This is most commonly used for printing.

Preparing Host Screens for Pass-Through

On the screen to be sent through the terminal serial port, the word ***PASSTHRU*** (in capital letters) must appear on the first line, starting on the second column. The actual data to be sent to the terminal may start anywhere below the first line.

With 5250 or 3274 emulations, attributes occupy a position in the screen buffer. An attribute placed between column 2 and the end of the word "PASSTHRU" will 'push' all following characters one position to the right. Therefore, any required attributes should occupy column 1 of the first line (just preceding the word "PASSTHRU").

For example:

```
column: 1 2 3 4 5 6 7 8 9
line 1: @ P A S S T H R U @
line 2: @ P A R T :   1 2 3 4 5
```

where **@** *is an attribute.*

When the CommServer is finished sending the data to the terminal's printer, it will send an ENTER key to the host. The host must wait for the ENTER key before sending any more screens (including other PASSTHRU screens) to this terminal.

Note: *Refer to the appropriate terminal user manual for information about setting parameters on the terminal for pass-through.*

Procedures Checkbox

Procedures: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer is allowed to send TESS procedures to the terminals. A TESS procedure is a group of TESS commands that can be executed by the TESS execute procedure command.

Local Checkbox

Local: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer is allowed to provide pages to be loaded as local TESS procedures in the terminals.

The local procedures are selected from a menu at the terminal. The terminals can perform these procedures when they are offline. Later when the terminals are online, they send the results of these functions to the host.

Note: *The* Procedures *parameter also must be enabled for* Local *to work.*

TSF/O Checkbox

TSF/O: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer uses Psion Teklogix' Screen-Formatter/Optimizer software.

Host Print Checkbox

Host Print: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

When this parameter is enabled, the host can send extra data to the terminal's screens, and instruct the terminal to print it. This is in contrast to the Local Print feature, where the terminal makes the initial print request.

The text that is passed to the printer is formatted into the 24 x 80 application screen. If the host can initiate the print operation, the text is printed. The CommServer identifies the additional text as a print page by the presence of the word *PRINT* (in capital letters) beginning in the 2nd column of line 13 on the 24 x 80 screen. The word *PRINT* should be defined as *display-only text.*

The print page is positioned below the terminal's display page (see the following figure). The size of the print page is always the same as the terminal's display page (assuming that in the terminal's configuration, the page length is less than 12 lines).

When "Host Print" is enabled, the CommServer passes the print page to the terminal after receiving the application screen from the host.

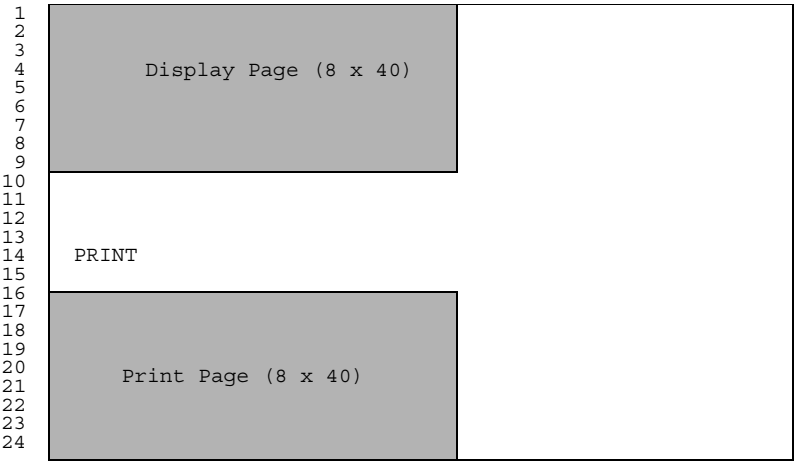


Figure C.9 Application Screen With Print Page

Notes:

- *Unlike with the "Passthru" option, when using "Host Print" no escape commands can be sent to the printer.*
- *Support for printing must be enabled at the terminal level – refer to the Terminals User Manual or the Parameter Guide for more information).*

Remote Print Checkbox

Remote Print: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

When this parameter is enabled, the CommServer sends the print page to a terminal whenever the terminal requests it (by sending the F17 function key from the terminal, or the *PRINT* key on older terminals). The CommServer sends the function response back to the host.

This is in contrast to Host Print, where the host makes the initial print request.

Note: *Support for printing must be enabled at the terminal level. Refer to the appropriate terminal user manual for more information.*

Pages Textbox

Pages: [ ]

Values: `0 - 79`

Default: `8`

The number of host screens (or pages) stored at the terminal.

The CommServer reduces data transmitted to the terminals by using the terminal's capability to store a page of data for each screen it displays. The CommServer maintains an image of each page stored at the terminal. After receiving an application screen, the CommServer tries to match the screen with a stored page.

If a similar page is already in the terminal's memory, the CommServer simply instructs the terminal to re-display its copy of the page; only the necessary changes are sent from the CommServer. If no match is found, the complete page is sent to the terminal over the radio link.

Note: *There is a corresponding parameter on the terminal itself, and the* ***actual*** *number of saved pages will be the* ***smaller*** *of the two values.*

Transmit Line Textbox

Transmit Line: [ ]

Values: `0 - 24`

Default: `<none>`

When this feature is enabled, all modified data at the terminal will be automatically transmitted when the operator enters data into a *transmit-upon- entry* field.

The value in this textbox specifies the line on the screen which is designated the *transmit line*. The last entry field above or on the transmit line on the screen will be identified as the transmit-upon-entry field. If any entry fields exist on lines below the transmit line, no entry field will be designated as the transmit-upon-entry field.

A value of 0 (zero) disables this feature.

A value of 24 will cause the *last* entry field on each application screen to be defined as "transmit-upon-entry".

AIAG Textbox

AIAG: [ ]

Values: **0 - 127**

Default: **<none>**

This textbox contains the decimal value of the ASCII character code of the AIAG *mode character* as described below.

Whenever bar code data is entered at a terminal, the terminal searches for AIAG fields on the current page that can accept the bar code data. The data preloaded into the AIAG field by the application program determines whether the bar code data is accepted. The format of the preloaded data is:

<mode><AIAG prefix>

The application program distinguishes an entry field as AIAG by preceding the field with a special *mode character* which denotes the existence of AIAG fields on the host screen. This character is entered as an ASCII value.

The mode character is derived by starting with the decimal value 48 (ASCII character '0') and adding the appropriate value from the table below.

Code	Meaning of Code
1	**Prevent the AIAG prefix from being displayed.**
2	**Prevent the AIAG prefix from being sent to the host.**
4	**Cause a transmission to the host when all AIAG fields with this mode set are filled. The transmission is sent by a Function 0 (F0) code.**
8	**Allow overwriting of previously entered data.**
16	**Start the search for a matching AIAG field at the current cursor position. Otherwise, the cursor will start at the top of the page.**

Table C.10 Mode values for the AIAG fields

For example, the '**@**' symbol is used to apply the cursor matching function, since adding 16 to 48 results in decimal value 64, which is the ASCII value for the character '**@**'.

A value of 0 (zero) disables this feature.

Visible Match Character Textbox

Visible Match Character: [ ]

Values: **0 - 127**

Default: **<none>**

With field matching, the host computer preloads data into an entry field. Now the terminal operator can make an entry that matches this preloaded data. For visible match fields, the preloaded data will be displayed in the entry field at the operator's terminal.

The application program distinguishes an entry field as a *match field* by preceding it with a special character.

The special character is entered as the decimal character code for one of the first 127 ASCII characters.

A value of 0 (zero) disables this match field feature.

For example, assume that the ">" character (ASCII decimal character code 62) is defined for visible match fields. This character must immediately precede the entry field:

```
Part #>_______
```

The field: `Part #>` includes the character > and is followed by the part number entry field on the screen. If any other character was chosen as the last character of the text, the entry field would not be a match field.

The preloaded data sent to a terminal may consist of the exact characters, special match characters or a combination of the two. The match characters recognized by the Psion Teklogix terminals are shown in the table below.

For example, suppose you wish to preload an entry field with a part number. If the exact part number is known, you may simply preload the field with that part number. If more flexibility is required, and part numbers always begin with two alphabetic characters followed by a hyphen character and four digits, then the match string for the field could be: `&&-####`.

If an entry is different from the preloaded data, the entry will be displayed, the terminal will beep and the cursor will be in the first position of the match field.

Now either another entry in the match field can be made or the cursor can be moved to a new field. When an entry (even if it doesn't match the host's preloaded data) is made in a match field, this entry will be sent to the host as part of the terminal's modified data during the next transmission.

Match Character	Use
#	match a number
&	match a letter (either case)
^	match an upper case letter
_	match a lower case letter
|	match an alphanumeric character
"	match a letter, number or space
?	match a punctuation character
'	match any character
:	match all character positions in the field with the preceding character
;	match any remaining characters, but not necessarily the remainder of the field, with the preceding character

Table C.11 Match Characters

Hidden Match Character Textbox

Hidden Match Character: [ ]

Values: `0 - 127`

Default: `<none>`

A special character is used to mark *Hidden Match* fields in a TESS screen. This character precedes the field contents of the Hidden Match field. In hidden-match fields, as opposed to visible-match fields, the preloaded entry is not displayed in the entry field at the operator's terminal).

This textbox allows the user to enter the decimal representation of the ASCII character code of this special character. A value of 0 (zero) disables this feature.

Serial I/O Textbox

Serial I/O:

Values: **0 - 127**

Default: **<none>**

Serial I/O fields are special entry and fixed fields that accept input from and output to a serial port. The application program distinguishes this field as *Serial I/O* by preceding the field with a special character.

If this character precedes a fixed field, the data will be sent *to* the terminal's serial port. If it precedes an entry field, the field accepts data *from* the terminal's serial port.

This textbox contains the decimal representation of the ASCII character-code of this special character.

A value of 0 (zero) disables this feature.

Print Line Textbox

Print Line:

Values: **0 - 24**

Default: **<none>**

This textbox allows the user to enter the starting line number of the print page in the application screen.

A value of 1 causes the display page to be printed. A value of 0 (zero) disables this feature.

Print Form Length Textbox

Print Line:

Values: **0 - 24**

Default: **<none>**

This textbox allows the user to enter the printer's form length in lines.

Barcode Textbox

Barcode:

Values: **0 - 127**

Default: **<none>**

Barcode-input-only fields are special entry fields that only accept input from a bar code reader. The application program distinguishes an entry field as *barcode-input-only* by preceding the field with a special character.

This textbox contains the decimal representation of the ASCII character code of this special character.

A value of 0 (zero) disables this feature.

Entry Line Textbox

Entry Line:

Values: **0 - 24**

Default: **<none>**

This textbox contains the number of the first line displayed if there is no entry field in the upper left portion of the screen and if an entry field is at or below this line.

The *Entry Line* parameter allows an automatic offset within the host screen, so that the area displayed by the terminal includes an entry field that would normally be out of bounds. Normally, Psion Teklogix terminals only display the upper left corner of the application screen because of their smaller display size.

Field Overhead Textbox

Field Overhead:

Values: **0 - 80**

Default: **0**

This textbox contains the maximum number of characters allowed between two *fixed* fields which still allows the CommServer to join them into one field.

Sometimes the CommServer will join two adjacent fixed fields and then send them as one field. This reduces the overhead on the radio link. For example, if two fields were 4 characters apart and this parameter was 5, then these fields would be joined into one.

This feature affects fields with the "Normal" display attribute only.

Command Region Textboxes

Command Region: [ ], [ ] - [ ], [ ]

Values: **`row values: 0-24; column values: 0-80`**

Default: **`<none>`**

These two pairs of textboxes define a region of the host screen which the CommServer will examine for the presence of reserved commands. The first textbox of each pair contains the row number; the second contains the column number.

These four numbers represent the row and column addresses of the upper left corner and the lower right corner of the command region. To define the last two lines of the host screen as the command region, for example, enter the values *23, 1* and *24, 80*.

Currently, the only commands supported in the command region are *ALARM* and *FONT*:

- When the word *ALARM* is placed anywhere within the command region, the CommServer will send a TESS *beep* command to the terminal.
- When the word *FONT* is placed anywhere within the command region, and followed by a number (the *font code*), the CommServer will send the appropriate TESS Change Font command to the terminal.

Psion Teklogix terminals use the font code to specify what font to use. See "Fonts And Font Codes" on page E-45 for a listing of fonts and font codes.

Enable Colour Support Checkbox

Enable Colour Support: ☐

Values: **`<selected>, <unselected>`**

Default: **`<unselected>`**

If this checkbox is selected, the CommServer uses coloured text in the host screens it sends to the terminals.

Foreground Colour Listbox

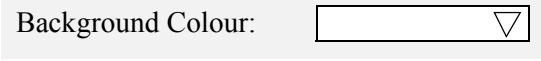
Foreground Colour: [▽]

Values: **`Aqua, Black, Blue, Fuschia, Gray, Green, Lime, Maroon, Navy, Olive, Purple, Red, Silver, Teal, White, Yellow`**

Default: **Black**

This listbox allows the user to select the 'foreground colour', the colour of the text, that the CommServer's HTTP server will send to terminals connecting via HTTP. The choices are the 16 predefined HTML colour names.

Background Colour Listbox

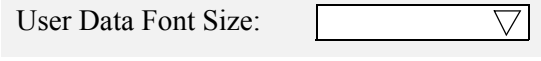


Values: **Aqua, Black, Blue, Fuschia, Gray, Green, Lime, Maroon, Navy, Olive, Purple, Red, Silver, Teal, White, Yellow**

Default: **Silver**

This listbox allows the user to select the 'background colour', the colour of the HTML page, that the CommServer's HTTP server will send to terminals connecting via HTTP. The choices are the 16 predefined HTML colour names.

User Data Font Size Listbox



Values: **1, 2, 3, 4, 5, 6, 7**

Default: **3**

This listbox allows the user to select the size of the font in which user data will be presented to the terminals'web browser.

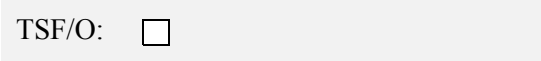
Function Key Font Size Listbox

Values: **4pt, 6pt, 8pt, 10pt, 12pt, 14pt**

Default: **8pt**

This listbox allows the user to select the protocol to be used for the connection between the terminal and the CommServer. Terminals may connect through TESS or HTTP.

TSF/O Checkbox

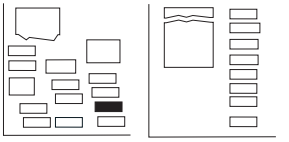


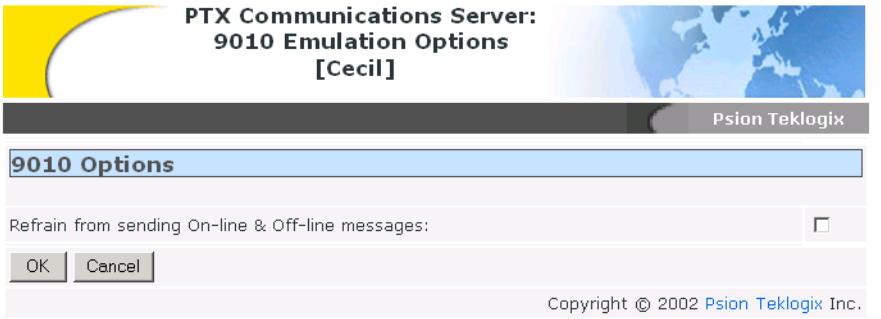
Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer uses Psion Teklogix' Screen-Formatter/Optimizer software.

The Emulation Options Screen (9010 Emulation)





The CommServer displays this version of the *Emulation Options* screen after the user has selected the *9010/Telnet* or *9010/Serial* emulation/protocol combinations for this host connection.

Note: *The screen shown here gives the emulation options for a host named Cecil.*

Refrain From Sending Online & Offline Messages Checkbox

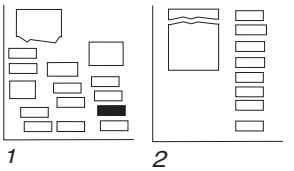
Refrain from sending Online & Offline messages: ☐

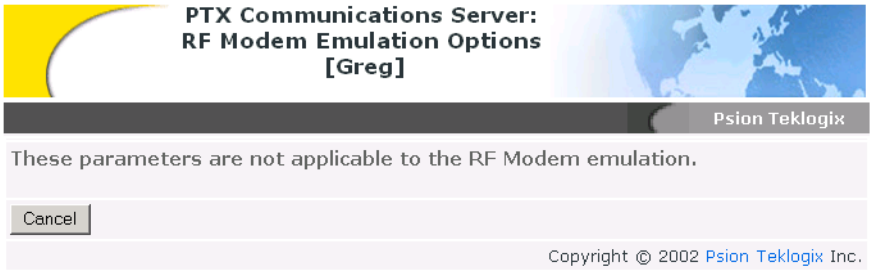
Values: **<enabled>, <disabled>**

Default: **<disabled>**

If this checkbox is enabled, the CommServer does not send terminal-offline and terminal-online messages to the host.

The Emulation Options Screen (RF Modem Emulation)



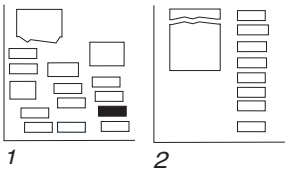


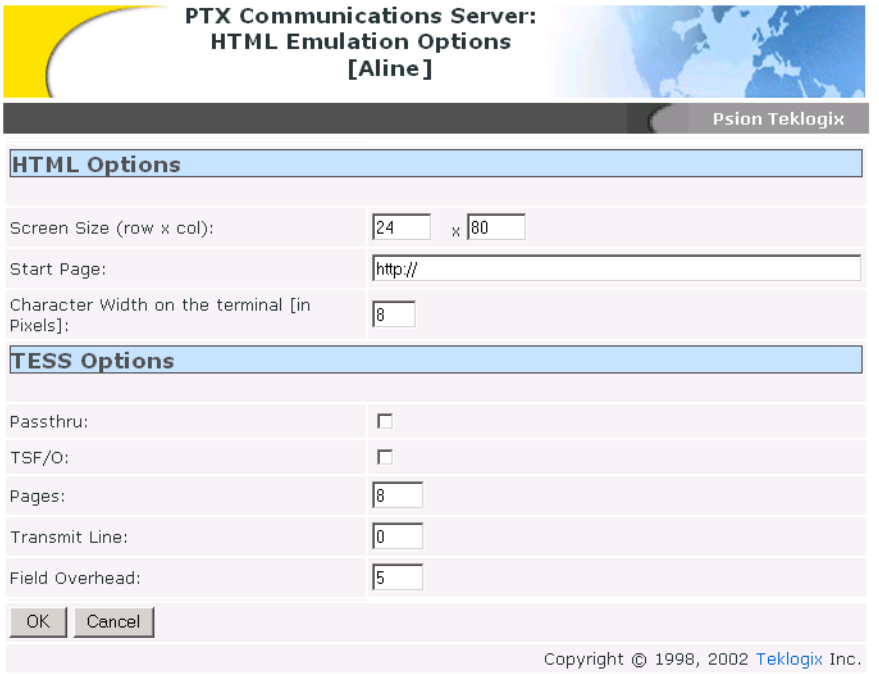
The CommServer displays this version of the *Emulation Options* screen after the user has selected the *RF Modem/Telnet* emulation/protocol combinations for this host connection.

Note: *The screen shown here gives the emulation options for a host named Greg.*

This emulation is intended for a CommServer communicating with a Psion Teklogix Model 6040 RF Modem; since the 6040 simply passes serial data through to connected serial devices, there are no emulation options.

The Emulation Options Screen (HTML Emulation)





The CommServer displays this version of the *Emulation Options* screen after the user has selected the *HTML* emulation/protocol combinations for this host connection.

Note: *The screen shown here gives the emulation options for a host named Aline.*

This emulation is intended for a CommServer interpreting HTML pages for terminals running TESS. The CommServer transforms TESS requests to from the terminals into standard HTML requests, and sends the HTML requests to a server. Replies from the web server arrive in the form of HTML pages; the CommServer translates these into equivalent TESS pages and sends them on to the terminals.

Psion Teklogix DOS-based terminals communicating by TCP/IP to access points do not require this emulation.

Screen Size Textboxes

Screen Size: [ ] x [ ]

Values: **1 x 1 - 40 x 132**

Default: **24 x 80**

These textboxes contain the number of lines on the terminal screen, and the number of characters in each line.

If you enter an invalid range, an error message results. Changes are not written to the database, and you can enter a valid range.

Start Page Textbox

Start Page: [ ]

Values: **<any valid web address>**

Default: **http://**

This textbox contains the web address (or URL) of the HTML emulator's *start page*. The CommServer retrieves this page, parses it into TESS, and sends the TESS datastream by default to each terminal.

If the CommServer cannot retrieve the start page, it sends a simple page to the terminal containing a link to the start page. The user can then request the start page later by following the link. display size.

The scheme (the **http://** part) must be provided with the start page's web address. The TekHTML emulator expects it, and does not provide it if it is not specified.

The terminal requests the start page when the user presses the *Home* function key (see page C-130 for information on selecting the *Home* function key).

Character Width on the Terminal Textbox

Character Width on the Terminal: [ ]

Values: **1 - 10**

Default: **8**

This textbox specifies the width in pixels of a single character on the terminal screen. The emulator uses this width value when formatting web pages to fit the terminal screen.

Passthru Checkbox

Passthru: ☐

Values: **<enabled>, <disabled>**

Default: **<disabled>**

If this checkbox is selected, the CommServer allows the host to send data directly to the RF terminal's serial port. This is most commonly used for printing.

TSF/O Checkbox

TSF/O: ☐

Values: **<enabled>, <disabled>**

Default: **<disabled>**

When this parameter is enabled, the host can use the Psion Teklogix Screen Formatter and Optimizer software.

Pages Textbox

Pages: ☐

Values: **1 - 32**

Default: **8**

The number of host screens (or pages) stored at the terminal.

The CommServer reduces data transmitted to the terminals by using the terminal's capability to store a page of data for each screen it displays. The CommServer maintains an image of each page stored at the terminal. After receiving an application screen, the CommServer tries to match the screen with a stored page.

If a similar page is already in the terminal's memory, the CommServer simply instructs the terminal to re-display its copy of the page; only the necessary changes are sent from the CommServer. If no match is found, the complete page is sent to the terminal over the radio link.

Note: *There is a corresponding parameter on the terminal itself, and the **actual** number of saved pages will be the **smaller** of the two values.*

Transmit Lines Textbox

Transmit Lines:

Values: `0 - 24`

Default: `0`

When this feature is enabled, all modified data at the terminal will be automatically transmitted when the operator enters data into a *transmit-upon- entry* field.

The value in this textbox specifies the line on the screen which is designated the *transmit line*. The last entry field above or on the transmit line on the screen will be identified as the transmit-upon-entry field. If any entry fields exist on lines below the transmit line, no entry field will be designated as the transmit-upon-entry field.

A value of 0 (zero) disables this feature.

Field Overhead Textbox

Field Overhead:

Values: `1 - 80`

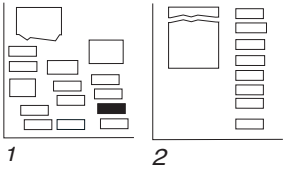
Default: `5`

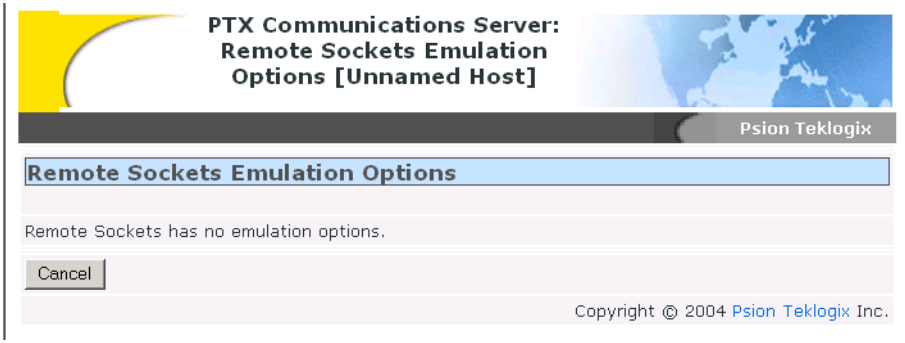
This textbox specifies the maximum number of characters allowed between two *fixed* fields. The HTML emulator joins two adjacent fixed fields separated by this many or fewer characters, then sends them as one TESS field. This reduces the overhead on the radio link.

For example, if two fields were 4 characters apart and this parameter was 5, then these fields would be joined into one.

This feature affects fields with the "Normal" display attribute only.

The Emulation Options Screen (Remote Sockets Emulation)





The CommServer displays this version of the *Emulation Options* screen after the user has selected the *Remote Sockets* emulation/protocol combinations for this host connection.

Note: *The screen shown here gives the emulation options for a host named Unnamed Host.*

This emulation is intended for a CommServer communicating with a Psion Teklogix device using the Remote Sockets proxy communications mechanism. There are no emulation options.

C.2.2.5 Protocol Options

This screen differs depending on the type of emulation and protocol selected in the *General Host Options* screen.

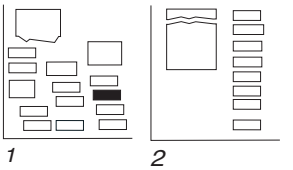
There are nine variants of this screen for the following emulation and protocol combinations:

- Telnet protocol (ANSI emulation). See page C-89.
- Telnet protocol (2392 emulation). See page C-97.
- Telnet protocol (3274 emulation). See page C-100.
- Telnet protocol (5250 emulation). See page C-110.
- Telnet protocol (9010 emulation). See page C-119.

- Telnet protocol (RF modem emulation). See page C-120.
- SNA protocol (3274 emulation). See page C-106.
- SNA protocol (5250 emulation). See page C-114.
- HTML protocol/ emulation. See page C-121.
- Remote Sockets protocol/emulation. See page C-122.

There are no configurable protocol options for the HTML or Remote Sockets protocol/emulation combinations.

The Protocol Options Screen (ANSI Emulation / Telnet Protocol)



PTX Communications Server: ANSI Telnet Protocol Options [Daevid]

Psion Teklogix

Terminal Type:	VT100
Host Port:	23
Maximum Sessions per Terminal:	4
Close Host sessions on Terminal reset:	☐
First Local Terminal Port:	10000
Local IP Address to Bind:	0.0.0.0 :
First Terminal Listen Port:	0
TCP Session Request Key:	1
Session Cycle Key:	2
Last Active Session Key:	5
Auto-telnet/login Enable:	DISABLE
Auto-telnet Host:	
Auto-telnet Terminal Prompt:	Press ENTER to login.
Auto-login User ID:	
Auto-login Password:	
Auto-login User ID prompt:	gin:
Auto-login Password prompt:	word:
Auto-login failed login:	incorrect
Auto-telnet Without User Action:	☐
Auto-telnet Without User Action Timing Delay:	25
Maximum of Auto-telnet Retries:	0
Allow TCP Sessions:	☑

OK Cancel

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The CommServer displays this version of the *Protocol Options* screen when the user selects the emulation/protocol combination of *ANSI/Telnet* for this host.

Note: *The screen shown here gives the emulation options for a host named Daevid.*

Terminal Type Listbox

Terminal Type: ▽

Values: **VT-100, VT-220**

Default: **VT-100**

This listbox specifies the type of terminal to be emulated by the CommServer.

Host Port Textbox

Host Port:

Values: **1 - 32767**

Default: **23**

This textbox specifies the value for the host port for the selected ANSI host connection.

Maximum Sessions Per Terminal Textbox

Maximum Sessions per Terminal:

Values: **1 - 127**

Default: **4**

This textbox specifies the maximum number of telnet connections allowed to and from each terminal.

Close Host Sessions On Terminal Reset Checkbox

Close Host sessions on Terminal reset: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, all host sessions will be closed when the termiunal resets. If the checkbox is unselected, the sessions will remain open if the terminal resets.

First Local Terminal Port Textbox

First Local Terminal Port: [ ]

Values: `1 - 32767`

Default: `0`

This textbox specifies the port number from which the CommServer attempts a telnet connection for the first terminal. Additional telnet sessions are assigned higher port numbers.

This parameter only takes effect if the Local IP Address to Bind parameter is specified.

Important: ***Do not set the first local terminal port to 16100! Port 16100 is used as a listen port by hosts using Psion Teklogix' 9010 protocol.***

Local IP Address To Bind Textbox

Local IP Address to Bind: [ ]

Values: `<any valid IP address>`

Default: `<none>`

This textbox specifies the IP address of the CommServer interface that connects to this host. It is used along with the local port numbers to create a unique socket for each terminal session.

First Terminal Listen Port Textbox

First Terminal Listen Port: [ ]

Values: `<see text>`

Default: `0`

This textbox specifies the lowest port number at which the CommServer listens for telnet connections initiated by the host.

Note: *Entering a value of 0 disables this option.*

TCP Session Request Textbox

TCP Session Request: [ ]

Values: `0 - 255`

Default: `1`

This textbox contains the decimal ASCII character code of the character which, when entered at the terminal, requests a new ANSI terminal session.

Session Cycle Key Textbox

Session Cycle Key: [ ]

Values: **0 - 255**

Default: **2**

This textbox contains the decimal ASCII character code of the character which, when entered at the terminal, requests the next ANSI terminal session.

Last Active Session Key Textbox

Last Active Session Key: [ ]

Values: **0 - 255**

Default: **5**

This textbox contains the decimal ASCII character code of the character which, when entered at the terminal, requests the last ANSI terminal session.

Auto-Telnet/Auto-Login Enable Listbox

Auto-Telnet/Login Enable: [▽]

Values: **Disable; Auto-Telnet; Auto-Telnet/Login**

Default: **Disable**

This listbox enables the user to disable or enable automatic connection of telnet sessions from terminals to this host.

The choices provided are to *disable* auto-telnet, to *enable* auto-telnet, and to enable auto-telnet *and auto-login*.

When auto-telnet is disabled, telnet sessions from the terminals to the host must be initiated manually from the terminals.

When auto-telnet is enabled, the CommServer initiates one telnet session from each terminal whose terminal number is mapped to this host. Additional telnet sessions may be initiated from each terminal to the host, but they must be initiated manually.

Note: *Auto-telnet sessions are only initiated for terminals which are 'online' (that is, turned on and operating properly on the Psion Teklogix RF network).*

When auto-telnet and auto-login are enabled, the CommServer initiates one telnet session from each terminal whose terminal number is mapped to this host. It then logs each session in to the host using the username and password provided in this screen.

Note: *The usename and password is identical for all auto-telnet sessions automatically logged in to this host.*

Auto-Telnet Host Textbox

Auto-Telnet Host: [ ]

Values: **`valid host name or IP address`**

Default: **`<none>`**

This textbox contains the host name or IP address for the host to which the CommServer connects auto-telnet sessions.

Note: *A host name placed in this textbox must be* resolvable *by the CommServer: the CommServer must be able to obtain an IP address for it. For example, the host name may correspond to an entry in the CommServer's host table, or the CommServer may be able to query a domain-name server.*

Any host name which can be used at the terminal's TCP> prompt may be used here.

Auto-Telnet Terminal Prompt Textbox

Auto-Telnet Terminal Prompt: [ ]

Values: **`any ASCII string. Max 60 characters`**

Default: **`Press ENTER to login.`**

This textbox contains the text presented to the user to request a login.

Non-printable characters, such as are used in escape sequences, are allowed. These characters can be entered using either octal or hexadecimal digits.

An octal escape sequence takes one of the forms:

`\0d` or **`\0dd`** or **`\0ddd`**

where each d can be any digit **`0-7`**.

A hexadecimal escape sequence takes one of the forms:

`\xh` or **`\xhh`**

where each **`h`** can be **`0-9`**, or any of **`a-f`** or **`A-F`**.

Each of these numeric escape sequences encodes one character. For example, the sequence "**\033abc**" becomes the character array {**033**,'**a**','**b**','**c**',**0**}

Notes:

1. *If the octal* **ddd** *is greater than decimal 256, the code value of the represented character will be the remainder of decimal* **ddd***/256.*
2. *"***\0***" is considered as a character with a code value of 0.*

Auto-Login User ID Textbox

Auto-Login User ID: [ ]

Values: **any ASCII string acceptable to the host. Max 15 characters**

Default: **<none>**

This textbox contains the user ID presented by the CommServer to the host for the auto-login sessions.

Auto-Login Password Textbox

Auto-Login Password: [ ]

Values: **any ASCII string acceptable to the host. Max 15 characters**

Default: **<none>**

This textbox contains the password presented by the CommServer to the host for the auto-login sessions.

Auto-Login User ID Prompt Textbox

Auto-Login User ID Prompt: [ ]

Values: **any ASCII string. Maximum 15 characters**

Default: **gin:**

The CommServer compares the text in this textbox to the text presented to it by the host. When they match, the CommServer assumes that the host has just sent its request for a user name, and it sends the username specified in the *Auto-Login User ID* parameter to the host.

Note: *The match string should be as short as possible, yet long enough to uniquely identify the user-ID prompt.*

It is strongly advised not to include multi-part words separated by space characters, since some hosts send out characters other than space characters to present a space on the screen.

Auto-Login Password Prompt Textbox

Auto-Login Password Prompt: [ ]

Values: **any ASCII string. Maximum 15 characters**

Default: **word:**

The CommServer compares the text in this textbox to the text presented to it by the host. When they match, the CommServer assumes that the host has just sent its request for a password, and it sends the password specified in the *Auto-Login Password* parameter to the host.

Note: *The match string should be as short as possible, yet long enough to uniquely identify the password prompt.*

It is strongly advised not to include multi-part words separated by space characters, since some hosts send out characters other than space characters to present a space on the screen.

Auto-Login Failed Prompt Textbox

Auto-Login Failed Prompt: [ ]

Values: **any ASCII string. Maximum 15 characters**

Default: **incorrect**

The CommServer compares the text in this textbox to the text presented to it by the host. When they match, the CommServer assumes that the host has just sent a string informing the terminal of a failed login attempt. The CommServer then presents the Auto-Telnet Terminal Prompt on the terminal's screen to request the user to login manually.

Note: *The match string should be as short as possible, yet long enough to uniquely identify the failed-login prompt.*

It is strongly advised not to include multi-part words separated by space characters, since some hosts send out characters other than space characters to present a space on the screen.

Auto-Telnet Without User Action Checkbox

Auto-telnet without user action: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer will attempt to connect to the host as soon as a terminal initializes, and it will attempt to reconnect if the telnet session is closed.

Auto-telnet Without User Action Timing Delay Textbox

Auto-telnet without user action timing delay: [ ]

Values: **0 - 15**

Default: **1**

This parameter specifies the number of milliseconds between auto-telnet connection requests sent to the host.

All requests to connect without user action are queued, and are processed with this delay between requests. This to prevent flooding host with connection and logins when the CommServer starts or is reset.

Maximum Number Of Auto-Telnet Retries Textbox

Maximum number of auto-telnet retries: [ ]

Values: **0 - 15**

Default: **1**

This parameter specifies the number of times the CommServer will attenpt to connect to a host if the host doesn't respond. If this parameter is zero, the CommServer attempts to connect forever.

Allow TCP Sessions Checkbox

Allow TCP Sessions: ☐

Values: **<selected>, <unselected>**

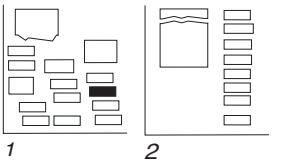
Default: **<selected>**

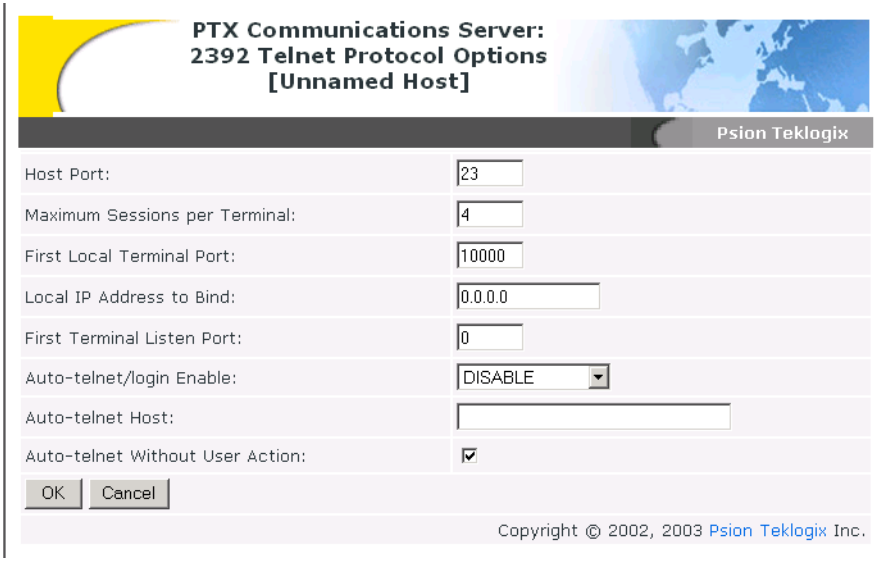
If this checkbox is unselected, and auto-telnet is enabled, all sessions requested by the terminal to this host emulation will be Auto-Login sessions.

If this checkbox is selected, sessions requested by the terminal can be either auto-iogin or TCP sessions. At the prompt of a TCP session, the operator can specify the desired host to connect to, and provide username and password.

On the terminal, **<CTRL>+A** requests a new session, **<CTRL>+B** changes to the next available session, and **<CTRL>+E** changes to the last available session.

The Protocol Options Screen (2392 Emulation / Telnet Protocol)





The CommServer displays this version of the *Protocol Options* screen when the user selects the emulation/protocol combination of *2392/Telnet* for this host.

Note: *The screen shown here gives the protocol options for a host named Elaine.*

Host Port Textbox

Host Port: [ ]

Values: **1 - 32767**

Default: **23**

This textbox allows the user to enter a host port value for the selected 2392 telnet host connection.

Maximum Sessions per Terminal Textbox

Maximum Sessions per Terminal: [ ]

Values: **0 - 127**

Default: **4**

This textbox contains the maximum number of telnet sessions which are allowed to originate from each terminal.

First Local Terminal Port Textbox

First Local Terminal Port: [ ]

Values: **1024 - 32767**

Default: **0**

This textbox contains the port number from which the first terminal will connect on outbound telnet sessions.

Local IP Address to Bind Textbox

Local IP Address to Bind: [ ]

Values: **<any valid IP address>**

Default: **0.0.0.0**

This textbox contains the IP address of the network adaptor in the CommServer from which the first terminal will connect on outbound telnet sessions.

First Terminal Listen Port Textbox

First Terminal Listen Port: [ ]

Values: **0 - 32767**

Default: **10000**

This textbox specifies the first port number at which the CommServer will listen for telnet connection requests to the terminals.

Note: *Entering a value of 0 disables this option.*

Auto-telnet/login Enable Listbox

Auto-telnet/login enable: ▽

Values: **DISABLE, AUTO-TELNET**

Default: **DISABLE**

This listbox allows the user to choose whether auto-telnet sessions are allowed to connect to this host.

Auto-telnet Host Textbox

Auto-telnet Host:

Values: **<any host ID>**

Default: **<none>**

This parameter specifies a host ID to which auto-telnet requests will be directed.

Auto-Telnet Without User Action Checkbox

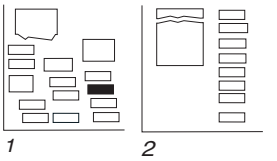
Auto-Telnet Without User Action: ☑

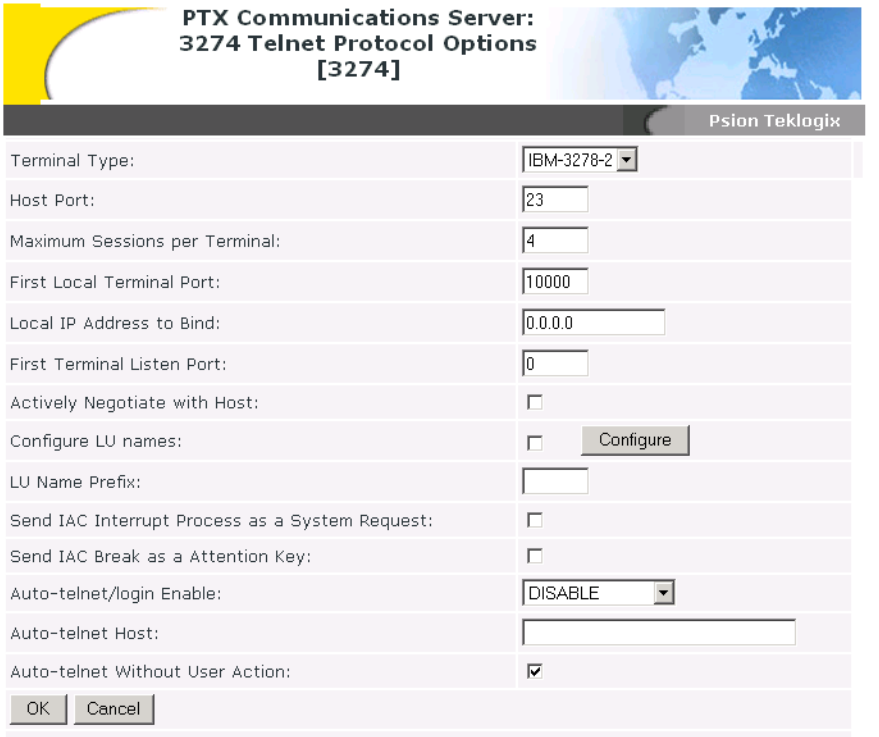
Values: **<selected>, <unselected>**

Default: **<selected>**

If this checkbox is selected, the CommServer will attempt to connect to a configured Auto-Telnet host by auto-telnet whenever that host is available.

The Protocol Options Screen (3274 Emulation / Telnet Protocol)





The CommServer displays this version of the *Protocol Options* screen when the user selects the emulation/protocol combination of *3274/Telnet* for this host.

Note: *The screen shown here gives the protocol options for a host named 3274.*

Terminal Type Listbox

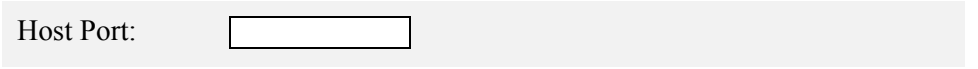
Terminal Type: ▽

Values: **IBM 3278-2**

Default: **IBM 3278-2**

This textbox allows the user to choose the type of terminal to be emulated by the CommServer for this host. At present there is only one choice of terminal for 3274/Telnet: the IBM 3278-2.

Host Port Textbox

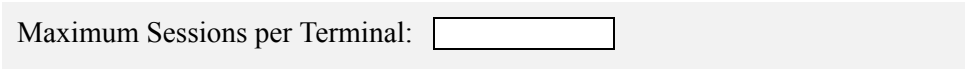


Values: **1 - 32767**

Default: **23**

This textbox allows the user to enter a host port value for the selected 3274 telnet host connection.

Maximum Sessions Per Terminal Textbox



Values: **0 - 127**

Default: **4**

This textbox contains the maximum number of telnet sessions which are allowed to originate from each terminal.

First Local Terminal Port Textbox

Values: **1024 - 32767**

Default: **0**

This textbox contains the port number from which the first terminal will connect on outbound telnet sessions.

Local IP Address To Bind Textbox

Values: **<any valid IP address>**

Default: **0.0.0.0**

This textbox contains the IP address of the network adaptor in the CommServer from which the first terminal will connect on outbound telnet sessions.

First Terminal Listen Port Textbox

First Terminal Listen Port: [ ]

Values: **`0 - 32767`**

Default: **`10000`**

This textbox specifies the first port number at which the CommServer will listen for telnet connection requests to the terminals.

Note: *Entering a value of 0 disables this option.*

Actively Negotiate With Host Checkbox

Actively Negotiate With Host: ☐

Values: **`<selected>, <unselected>`**

Default: **`<unselected>`**

If this checkbox is selected, the CommServer negotiates with the host during setup of the telnet connection.

Configure LU Names Checkbox

Configure LU Names: ☐ Configure

Values: **`<selected>, <unselected>`**

Default: **`<unselected>`**

If this checkbox is selected, individual terminals can be assigned Logical Unit names when communicating with this 3274 host. Terminal names can be configured in the Terminal Naming screen; this is accessible through the **Configure** button. See "The 3274 Telnet Terminal Naming Screen" on page C-104.

LU Name Prefix Textbox

LU Name Prefix: [ ]

Values: **`<see text>`**

Default: **`<none>`**

This textbox specifies the LU prefix to be prepended to terminal names when the *Configure LU Names* parameter is enabled. The prefix can be up to three alphanumeric characters.

Send IAC Interrupt Process As A System Request Checkbox

Send IAC Interrupt Process as a System Request: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer sends the IAC Interrupt Process request to the host as a 3274 System Request.

Send IAC Break As An Attention Key Checkbox

Send IAC Break as an Attention Key: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer sends the IAC Break request to the host as a 3274 Attention Key.

Auto-telnet/login Enable Listbox

Auto-telnet/login enable: ▽

Values: **DISABLE, AUTO-TELNET**

Default: **DISABLE**

This listbox allows the user to choose whether auto-telnet sessions are allowed to connect to this host.

Auto-telnet Host Textbox

Auto-telnet Host:

Values: **<any host ID>**

Default: **<none>**

This parameter specifies a host ID to which auto-telnet requests will be directed.

Auto-Telnet Without User Action Checkbox

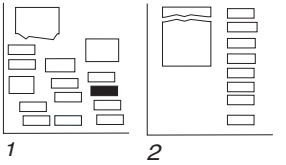
Auto-Telnet Without User Action: ☑

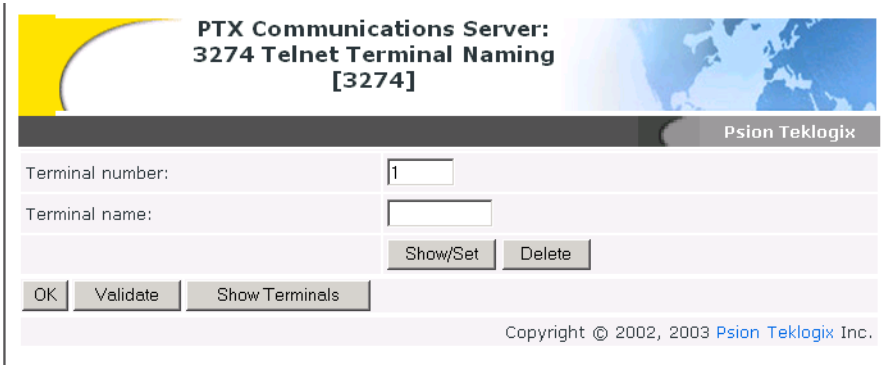
Values: **<selected>, <unselected>**

Default: **<selected>**

If this checkbox is selected, the CommServer will attempt to connect to a configured Auto-Telnet host by auto-telnet whenever that host is available.

The 3274 Telnet Terminal Naming Screen





The CommServer displays this screen after the user has pressed the **Configure** button next to the *Configure LU Names* parameter.

Terminal Number Textbox

Terminal Number:

Values: **`1 - <number of configured terminals>`**

Default: **`<none>`**

This textbox specifies the number of the terminal which will receive the name in the Terminal Name textbox.

Terminal Name Textbox

Terminal Name:

Values: **`<see text>`**

Default: **`<none>`**

This textbox specifies an LU name for the terminal. This name can contain no more than 1-5 alphanumeric characters.

If no terminal name is specified here for a terminal, the 9500 will append the terminal number (as five digits, with leading zeros if necessary) to the LU Prefix to create the full LU terminal name.

Show/Set Button

Press the **Show/Set** button to display the LU name associated with a terminal number.

If you have just entered a terminal number and LU name, press this button to add the terminal number and LU name to the list of configured terminals.

Delete Button

The **Delete** button allows the user to delete the currently-displayed terminal number and LU name from the list. When it is pressed, the 9500 displays a confirmation screen. Press **OK** in this screen to delete the terminal name and number from the list.

OK Button

The **OK** button saves changes to the database. When it is pressed, the 9500 displays a confirmation screen. Press **OK** in this screen to save the changes and exit to the main *3274/SNA Protocol Options* screen.

Validate Button

The *Validate* button allows the user to save the changes to the 9500's database without exiting from the *Terminal Naming* screen. The changes can also be saved through the *Main Screen*'s validation and saving option.

Show Terminals Button

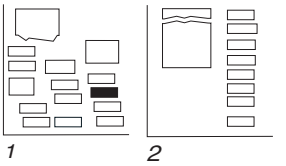
Show Terminals

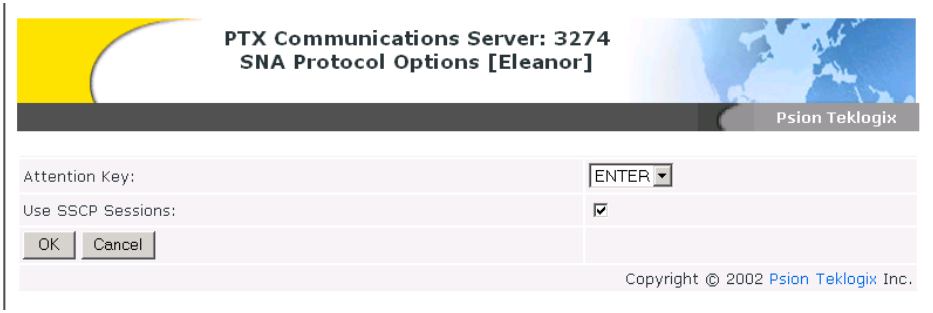
The *Show Terminals* button displays the list of currently-configured terminal names. When it is pressed, the 9500 displays the *Terminal Names* screen:

Teklogix 9500: Terminals names [3274]
Psion Teklogix
Tnum LU Name Tnum LU Name Tnum LU Name Tnum LU Name Tnum LU Name Tnum LU Name Tnum LU Name
1 abce 2 zywx
OK
Copyright © 2002, 2003 Psion Teklogix Inc.

This screen displays the configured terminal numbers and names. Press **OK** to return to the *Terminal Naming* screen.

The Protocol Options Screen (3274 Emulation / SNA Protocol)





The CommServer displays this version of the *Protocol Options* screen after the user has selected the *3274/SNA* emulation/protocol combination for this host connection.

Note: *The screen shown here gives the protocol options for a host named Eleanor.*

Attention Key Listbox

Attention Key: ▽

Values: **ENTER, ATTN**

Default: **ENTER**

This listbox specifies the character sent back to the host when the user presses the <ATTN> function key on a Psion Teklogix terminal.

Note: *The actual key used at the terminal to obtain the <ATTN> function key is configurable through the Function Key Mapping screen for this host connection.*

Use SSCP Sessions Checkbox

Use SSCP Sessions: ☑

Values: **<selected>, <unselected>**

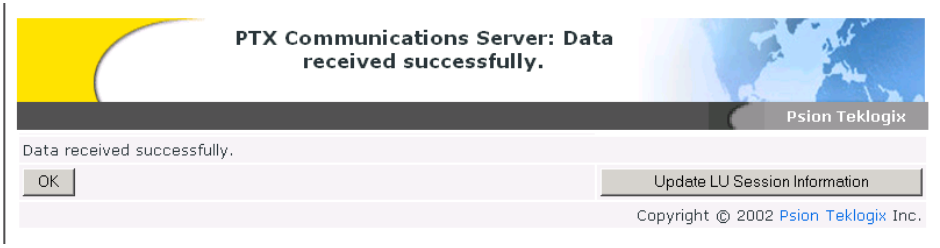
Default: **<selected>**

This checkbox indicates the type of sessions that can be used.

When this parameter is selected, the CommServer will attempt to establish an SSCP-LU session for a terminal before establishing an LU-LU session. Depending on the type of host, an SSCP-LU session may or may not be created.

When this parameter is not selected, only LU-LU sessions will be used.

When the **OK** button is pressed, the CommServer displays a confirnmation screen:



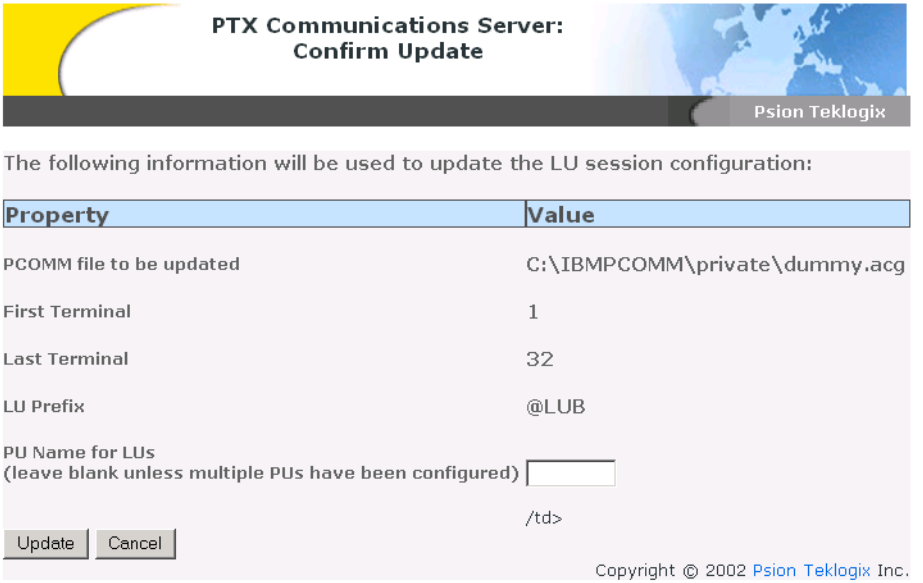
This screen includes the following button:

Update LU Session Information Button

Update LU Session Information

The *Update LU Session Information* button allows the user to update the information being passed to the CommServer's SNA software.

When the *Update LU Session Information* button is pressed, the CommServer displays an *Update Confirmation* screen:

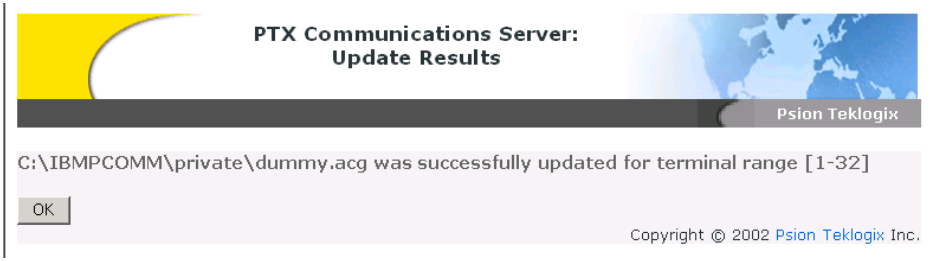


This screen lists the information that will be changed in the CommServer's SNA configuration:

- The path and filename of the configuration file that will be updated. This is the configuration file that has been selected as the default in the SNA software. (See page 165.)
- The terminal number of the first terminal for this host emulation.
- The terminal number of the last terminal for this host emulation.
- The LU prefix.
- The PU name for this host emulation's LUs.

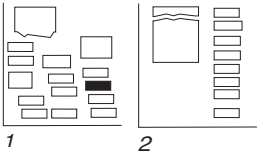
The PU name is optional and may be specified in this screen. It is only needed if the administrator is connecting to a host that has multiple PUs configured, and wishes to specify which PU is to be used by the CommServer.

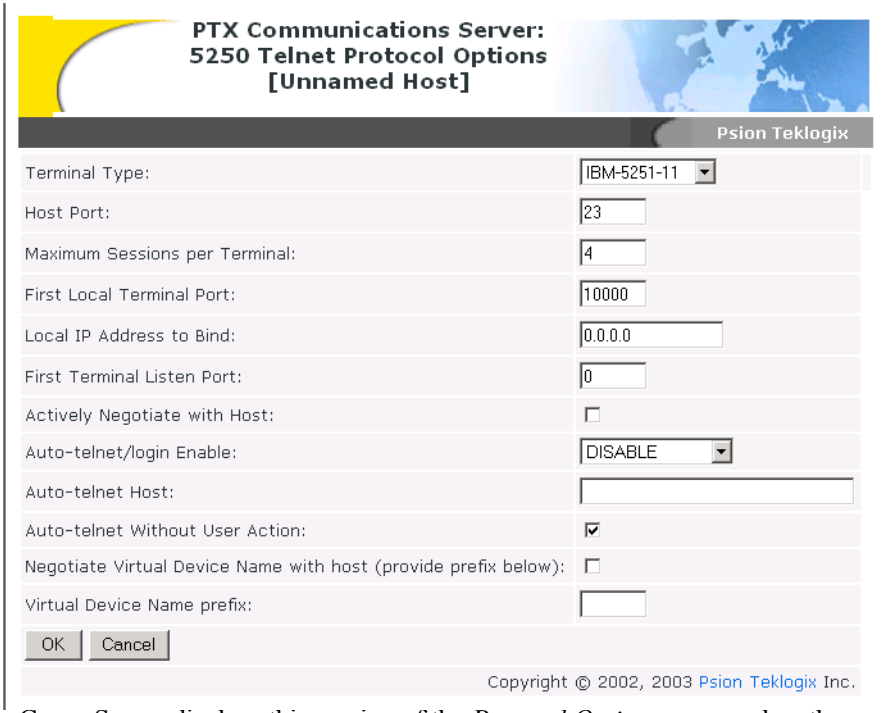
When the Update button is pressed, the CommServer changes the configuration file and displays a confirmation screen similar to this screen.



Press **OK** in this screen to return to the *Main Menu*.

The Protocol Options Screen (5250 Emulation / Telnet Protocol)





The CommServer displays this version of the *Protocol Options* screen when the user selects the emulation/protocol combination of *5250/Telnet* for this host.

Note: *The screen shown here gives the protocol options for a host named Deanna.*

Terminal Type Textbox

Terminal Type:

Values: **IBM 5251-11, IBM 5555-B01**

Default: **IBM 5251-11**

This textbox allows the user to select a terminal type which the CommServer will emulate.

Host Port Textbox

Host Port: [ ]

Values: `1 - 32767`

Default: `23`

This textbox allows the user to enter a host port value for the selected 5250 telnet host connection.

Maximum Sessions Per Terminal Textbox

Maximum Sessions per Terminal: [ ]

Values: `0 - 127`

Default: `4`

This textbox contains the maximum number of telnet sessions which are allowed to originate from each terminal.

First Local Terminal Port Textbox

First Local Terminal Port: [ ]

Values: `1024 - 32767`

Default: `0`

This textbox contains the port number from which the first terminal will connect on outbound telnet sessions.

First Terminal Listen Port Textbox

First Terminal Listen Port: [ ]

Values: `0 - 32767`

Default: `10000`

This textbox specifies the first port number at which the CommServer will listen for telnet connection requests to the terminals.

Note: *Entering a value of 0 disables this option.*

Local IP Address To Bind Textbox

Values: **<any valid IP address>**

Default: **0.0.0.0**

This textbox contains the IP address of the network adaptor from which the first terminal will connect on outbound telnet sessions.

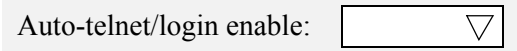
Actively Negotiate With Host Checkbox

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this textbox is selected, the CommServer negotiates with the host during setup of the telnet connection.

Auto-telnet/login Enable Listbox



Values: **DISABLE, AUTO-TELNET**

Default: **DISABLE**

This listbox allows the user to choose whether auto-telnet sessions are allowed to connect to this host.

Auto-telnet Host Textbox

Values: **<any host ID>**

Default: **<none>**

This parameter specifies a host ID to which auto-telnet requests will be directed.

Auto-Telnet Without User Action Checkbox

Values: **<selected>, <unselected>**

Default: **<selected>**

If this checkbox is selected, the CommServer will attempt to connect to a configured Auto-Telnet host by auto-telnet whenever that host is available.

Negotiate Virtual Device Name With Host Checkbox

Negotiate Virtual Device Name with Host: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

If this textbox is selected, the CommServer negotiates with the host to obtain a virtual device name for the telnet connection.

Virtual Device Name Prefix Textbox

Virtual Device Name Prefix: [ ]

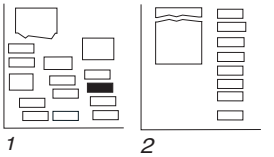
Values: **<any host ID>**

Default: **<none>**

This parameter specifies a prefix for the automatically-generated virtual device name. The device name on the host starts with the prefix, specifies the terminal (as its terminal number), and specifies a session number (as a letter). If the virtual device name prefix is TLX, for example, the first session on terminal number 2 receives a virtual device name of TLX0002A.

The prefix must use the *SNA Type A* character set, which includes uppercase letters A–Z, numbers 0–9, and the special characters $, # and @. Lower case letters are accepted and translated to uppercase characters. An SNA Type A character string must not begin with a number.

The Protocol Options Screen (5250 Emulation / SNA Protocol)



PTX Communications Server: 5250
SNA Protocol Options [5250 SNA]

Psion Teklogix

Host Name:	TLXLCPN			
User Name and Password:	TEKUSER	**********		
Enable Connect Screen:	☑			
Reconnection Timeout (seconds):	30			
Maximum Reconnection Attempts:	3			
Mode 1: Name, LU Prefix, Number of First and Last Terminals:	QPCSUPP	TLX00	1	32
Mode 2:			0	0
Mode 3:			0	0
Mode 4:			0	0
Mode 5:			0	0
Mode 6:			0	0
Mode 7:			0	0
Mode 8:			0	0

OK Cancel

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The CommServer displays this version of the *Protocol Options* screen after the user has selected the *5250/SNA* emulation/protocol combination for this host connection.

Note: *The screen shown here gives the protocol options for a host named "5250 SNA".*

Host Name Textbox

Host Name: [ ]

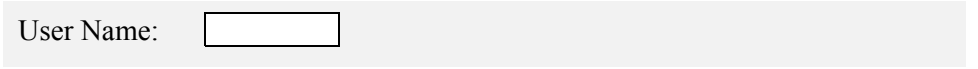
Values: **<see text>**

Default: **TLXLCPN**

This textbox contains the local host name for this host connection.

The name must use the SNA Type A character set, which includes uppercase letters A–Z, numbers 0–9, and the special characters $, # and @. Lower case letters are accepted and translated to uppercase characters. An SNA Type A character string must not begin with a number 0–9.

User Name Textbox



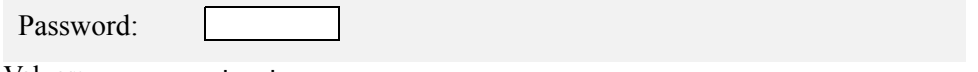
Values: **<see text>**

Default: **TEKUSER**

This textbox contains the user name for this host connection. This is for security verification of the host connection only, when the connection is made to the host. The user must still log in normally.

The user name must use the *SNA Type A* character set, which includes uppercase letters A–Z, numbers 0–9, and the special characters $, # and @. Lower case letters are accepted and translated to uppercase characters. An SNA Type A character string must not begin with a number.

Password Textbox



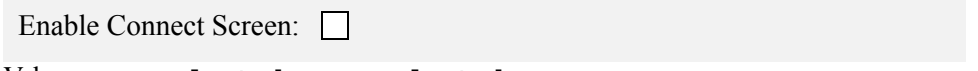
Values: **<see text>**

Default: **TEKPASS**

This textbox contains the password for this host connection. This is for security verification of the host connection only, when the connection is made to the host. The user must still log in normally.

The password must use the *SNA Type A* character set, which includes uppercase letters A–Z, numbers 0–9, and the special characters $, # and @. Lower case letters are accepted and translated to uppercase characters. An SNA Type A character string must not begin with a number.

Enable Connect Screen Checkbox



Values: **<selected>, <unselected>**

Default: **<unselected>**

If this checkbox is selected, the CommServer sends a special screen to the terminal when it is unable to connect to the host. Pressing <ENTER> on the terminal causes the CommServer to reattempt connection to the host.

Reconnection Timeout Textbox

Reconnection Timeout: [ ]

Values: **<see text>**

Default: **30**

This textbox specifies the maximum amount of time that the CommServer will wait for a reply when attempting a connection to the host. If there is no reply, it will attempt another connection, to the maximum number of times specified in the Maximum Reconnection Attempts parameter below.

Maximum Reconnection Attempts Textbox

Maximum Reconnection Attempts: [ ]

Values: **<see text>**

Default: **3**

This textbox specifies the maximum number of times that the CommServer attempts to connect to the host if the first attempt fails.

The Mode Parameters

Each SNA mode has four associated parameters: *Name*, *LU Prefix*, *First* terminal number, and *Last* terminal number.

Name Textbox

Name: [ ]

Values: **<see text>**

Default: **QPCSUPP**

This listbox contains the name of the mode on the host to use.

The name must use the *SNA Type A* character set, which includes uppercase letters A–Z, numbers 0–9, and the special characters $, # and @. Lower case letters are accepted and translated to uppercase characters. An SNA Type A character string must not begin with a number.

LU Prefix Textbox

LU Prefix: [ ]

Values: **<see text>**

Default: **TLX**

This textbox contains the exchange identifier for this host connection.

This is the prefix attached to the terminal number to form the LU name. The prefix may be 1 to 5 characters long, and the terminal number may be 1 to 4 characters long. The maximum length of the LU name formed from these is *eight* characters.

First Terminal Textbox

First Terminal: [ ]

Values: **<see text>**

Default: **1**

This textbox contains the number of the first terminal which uses this mode and this host connection.

Last Terminal Textbox

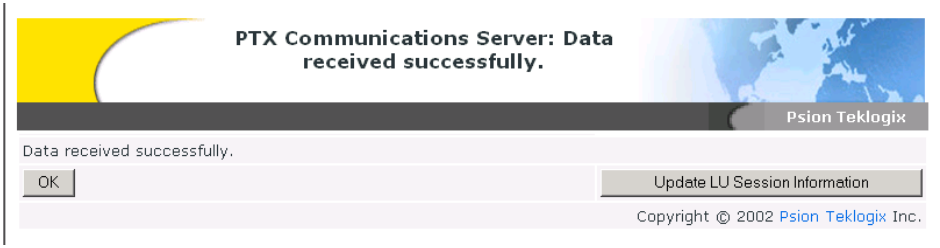
Last Terminal: [ ]

Values: **<see text>**

Default: **32**

This textbox contains the number of the last terminal which uses this mode and this host connection.

When the OK button is pressed, the CommServer displays a confirnmation screen:

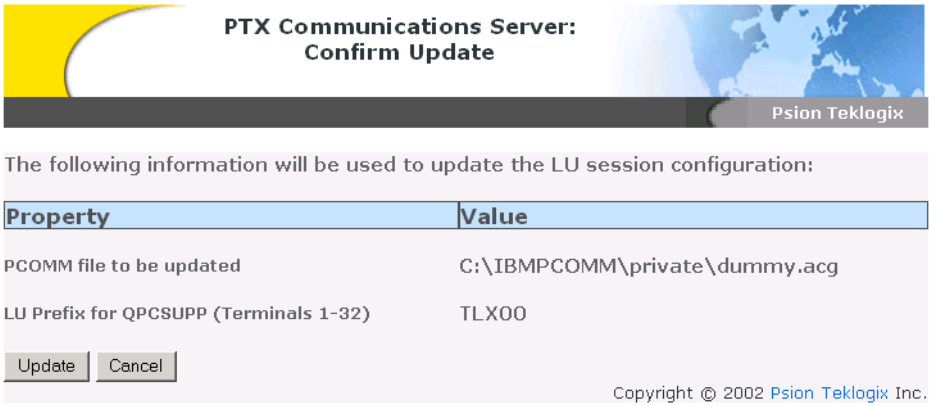


This screen includes the following button:

Update LU Session Information Button

Update LU Session Information

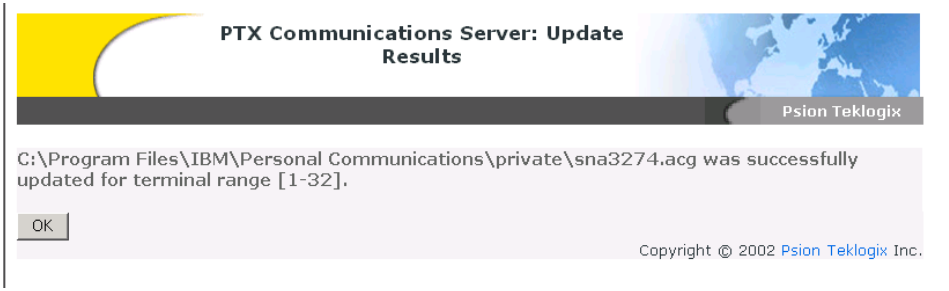
The *Update LU Session Information* button allows the user to update the information being passed to the CommServer's SNA software. When it is pressed, the CommServer displays an *Update Confirmation* screen:



This screen lists the following information:

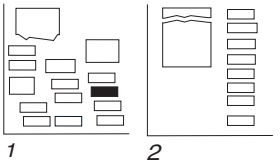
- The path and filename of the configuration file that will be updated.
  This is the configuration file that has been selected as the default in the SNA software. (See page 208).
- The LU prefix for terminals using the QPCSUPP mode, and which terminals are using it.

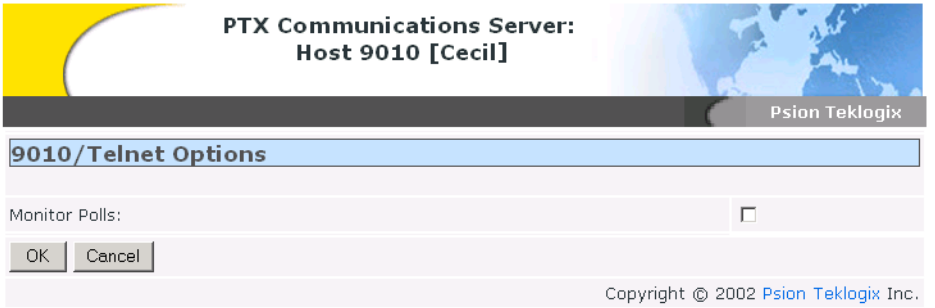
When the Update button is pressed, the CommServer changes the configuration file and displays a confirmation screen similar to this screen.


PTX Communications Server: Update
Results
Psion Teklogix
C:\Program Files\IBM\Personal Communications\private\sna3274.acg was successfully updated for terminal range [1-32].
OK
Copyright © 2002 Psion Teklogix Inc.

Press OK in this screen to return to the Main Menu.

The Protocol Options Screen (9010 Emulation / Telnet Protocol)





The CommServer displays this version of the *Protocol Options* screen after the user has selected the *9010 / Telnet* emulation/protocol combination for this host connection.

Note: *The screen shown here gives the emulation options for a host named Bob.*

Monitor Polls Checkbox

Monitor Polls: ☑

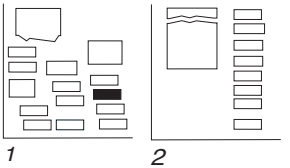
Values: **<selected>, <unselected>**

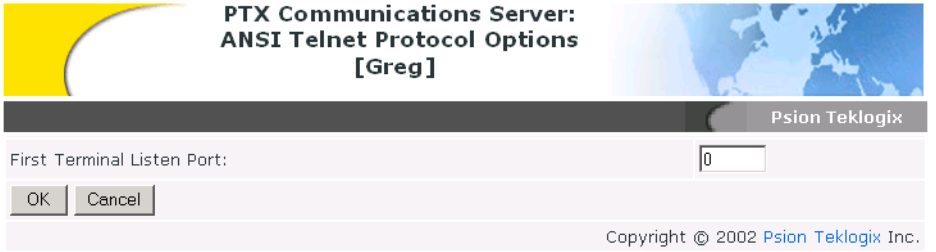
Default: **<selected>**

Hosts usually send messages or null polls to the CommServer within a period of approximately 40 seconds. If this checkbox is selected, the CommServer monitors messages and polls from this connection; if it does not receive a message or poll within 40 seconds, it closes the connection.

Note: *For older Unix handlers (hosts), this parameter should be deselected. In all other cases, this parameter should be selected.*

The Protocol Options Screen (RF Modem Emulation / Telnet Protocol)





The CommServer displays this version of the *Protocol Options* screen after the user has selected the *RF Modem / Telnet* emulation/protocol combination for this host connection.

Note: *The screen shown here gives the emulation options for a host named Greg.*

The RF Modem protocol is used with the Psion Teklogix Model 6040 RF Modem. This device acts as a terminal on the Psion Teklogix network, but data sent to it is forwarded through a serial port to another serially-connected device. Serial devices may thus communicate over the Psion Teklogix radio network.

See the *Psion Teklogix 6040 RF Modem User Manual* for details.

First Terminal Listen Port Listbox

First Terminal Listen Port: [ ]

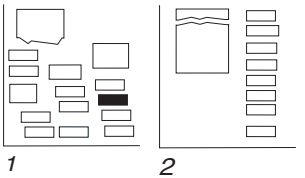
Values: `10000 - 65535`

Default: `10000`

This textbox contains the number of the first port upon which the CommServer listens for telnet connections from the host.

Note: *Entering a value of 0 disables this option.*

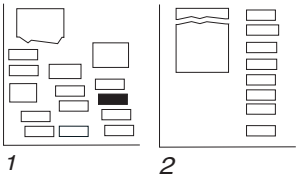
The Protocol Options Screen (HTML Emulation)

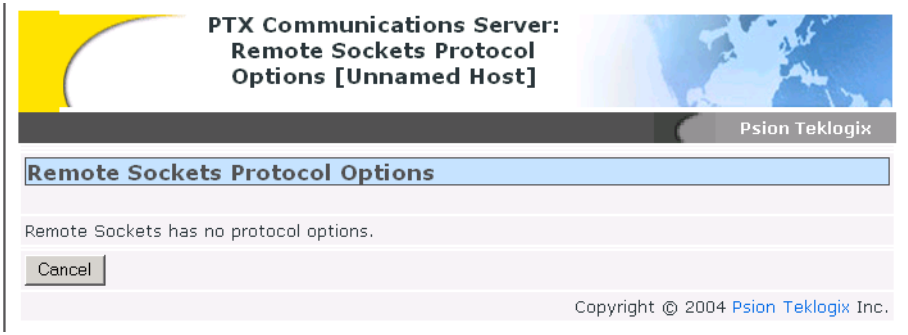


The CommServer displays a version of the *Protocol Options* screen with no configurable options after the user has selected the *HTML* emulation/protocol combination for this host connection.

Note: *The screen shown here gives the emulation options for a host named Aline.*

The Protocol Options Screen (Remote Sockets Emulation)





The CommServer displays a version of the *Protocol Options* screen with no configurable options after the user has selected the *Remote Sockets* emulation/protocol combination for this host connection.

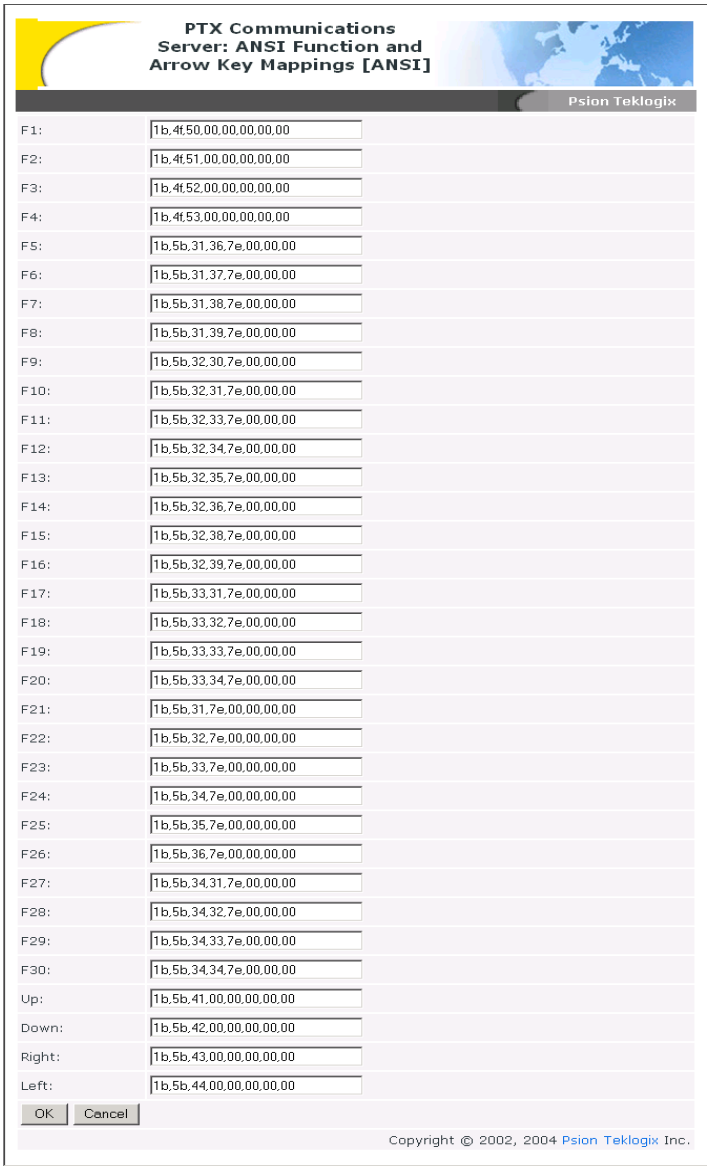
Note: *The screen shown here gives the emulation options for a host named Unnamed Host.*

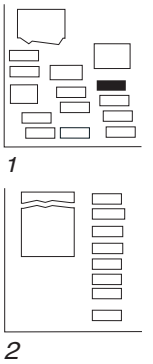
C.2.2.6 Function Key Mapping

This screen differs depending on the type of emulation selected in the *General Host Options* screen. There are five variants of this screen, depending on the emulation/protocol combination chosen for the host:

- ANSI function-key and arrow-key mapping (for the *ANSI/Telnet* emulation/protocol combination). See page C-124.
- 3274 function-key mapping (for the *3274/Telnet* and *3274/SNA* emulation/protocol combinations). See page C-127.
- 5250 function-key mapping (for the *5250/Telnet* and *5250/SNA* emulation/protocol combinations). See page C-129.
- HTML function-key mapping (for *HTML* emulation). See page C-130.
- No function-key mapping (for the *2392/Telnet, 9010/TCP/IP*, *RF Modem/Telnet* and *Remote Sockets* emulation/protocol combinations). See page C-132.

The ANSI Function And Arrow Key Mapping Screen





The CommServer displays this version of the *Function Key Mapping* screen after the user selects the *ANSI/Telnet* emulation/protocol combination for this host. This screen also includes arrow-key mappings.

Note: *The screen shown here gives the function-key options for a host named Gary.*

Function Key n Listbox

Fn: ▽

Values: **<see text>**

Default: **<see text>**

The function key textboxes allow the user to select a code that will be sent to the host when the user presses a function key on the terminal. Each function key may be chosen from the same range of possible codes; however, each function key has a different default code.

A null entry terminates the map-to sequence; it is not necessary to transmit nulls.

Arrow Key Listbox

<arrow key name>: ▽

Values: **<see text>**

Default: **<see text>**

The arrow key textboxes allow the user to select a code that will be sent to the host when the user presses one of the four arrow keys on the ANSI terminal. There are four arrow key listboxes, one for each of the Up, Down, Left and Right arrow keys. Each arrow key may be chosen from the same range of possible codes; however, each arrow key has a different default code.

Arrow key remapping does exist in the terminals, but is applicable only to telnet direct connections.

Function-key remapping and arrow-key remapping can be enabled, and operate, independently of each other.

Arrow key sequences sent from the terminal can be switched between 'Application' mode and 'Cursor Key' mode by the DECCKM command sent by the host. The sequences ares **CSI?1h** and **CSI?1l** There is also a local parameter on the terminal that can choose this mode.

The default arrow key sequences (in Psion Teklogix ANSI debug format) are:

In Cursor-Key Mode	7-Bit	8-Bit
Up arrow	(1b)[A	(9b)A
Down arrow	(1b)[B	(9b)B
Right arrow	(1b)[C	(9b)C
Left arrow	(1b)[D	(9b)D
In Application Mode		
Left arrow	(1b)OA	(8f)A
Right arrow	(1b)OB	(8f)B
Up arrow	(1b)OC	(8f)C
Down arrow	(1b)OD	(8f)D

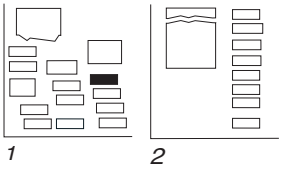
These sequences are remapped by the Communications Server to 4 configurable sequences, each a minimum of 5 hex characters long. A null entry terminates the map-to sequence; it is not necessary to transmit nulls.

The default values for arrow key mappings are the 7-bit Cursor key Mode values shown above. The CommServer recognizes both the 7-bit and the 8-bit forms of the key sequences.

The same escape timeout applies to arrow key remapping as to function key remapping.

The 'cursor key mode' parameter setting in the terminal is not considered by the CommServer. If the host changes the key sequence using DECCKM, the CommServer continues to remap the new key sequences. In other words, with arrow key mapping enabled, DECCKM will have no net effect.

The 3274 Function Key Mapping Screen



PTX Communications Server: 3274
Function Key Mappings [Fred]

Psion Teklogix

F0:	ENTER	F14:	PA2	F27:	F13
F1:	F1	F15:	PA3	F28:	F14
F2:	F2	F16:	CLEAR	F29:	F15
F3:	F3	F17:	F17	F30:	SESS
F4:	F4	F18:	F18	F31:	F16
F5:	F5	F19:	F19	F32:	ENTER
F6:	F6	F20:	F20	F33:	ENTER
F7:	F7	F21:	F21	F34:	ENTER
F8:	F8	F22:	F22	F35:	ENTER
F9:	F9	F23:	F23	F36:	ENTER
F10:	F10	F24:	F24	F37:	ENTER
F11:	F11	F25:	SYSREQ	F38:	ENTER
F12:	F12	F26:	ATTN	F39:	ENTER
F13:	PA1				

OK Cancel

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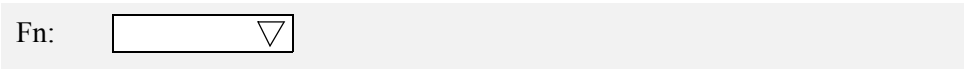
The CommServer displays this version of the *Function Key Mapping* screen after the user selects the *3274/ANSI* or *3274/SNA* emulation/protocol combinations for this host.

Note: *The screen shown here gives the function-key options for a host named Fred.*

Function Key n Listbox

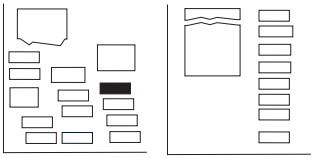


Values: **ENTER, NONE, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, F13, F14, F15, F16, F17, F18, F19, F20, F21, F22, F23, F24, PA1, PA2, PA3, PA4, ATTN, CLEAR, RESET, SELECTOR, SESS, SYSREQ**

Default: **<see text>**

The function key textboxes allow the user to select a code that will be sent to the host when the user presses a function key on the terminal. Each function key may be chosen from the same range of possible codes; however, each function key has a different default code.

The 5250 Function Key Mapping Screen



PTX Communications Server: 5250 Function Key Mappings [Bob]

Psion Teklogix

F0:	ENTER	F14:	F14	F27:	F17
F1:	F1	F15:	F15	F28:	F18
F2:	F2	F16:	CLEAR	F29:	UP
F3:	F3	F17:	PRINT	F30:	SESS
F4:	F4	F18:	HELP	F31:	ENTER
F5:	F5	F19:	F19	F32:	ENTER
F6:	F6	F20:	F20	F33:	ENTER
F7:	F7	F21:	F21	F34:	ENTER
F8:	F8	F22:	F22	F35:	ENTER
F9:	F9	F23:	F23	F36:	ENTER
F10:	F10	F24:	F24	F37:	ENTER
F11:	F11	F25:	DOWN	F38:	SELECTOR
F12:	F12	F26:	F16	F39:	ENTER
F13:	F13				

OK Cancel

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The CommServer displays this version of the *Function Key Mapping* screen after the user selects one of the *5250/Telnet* or *5250/SNA* emulation/protocol combinations for this host.

Note: *The screen shown here gives the function-key options for a host named Bob.*

Function Key n Listbox

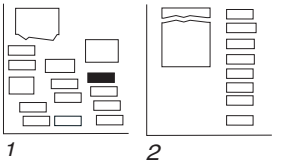
Fn: ▽

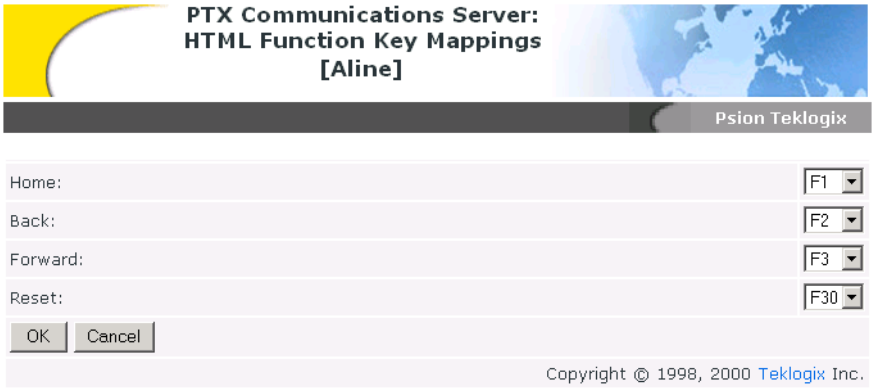
Values: `ENTER, NONE, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, F13, F14, F15, F16, F17, F18, F19, F20, F21, F22, F23, F24, PA1, PA2, PA3, PA4, ATTN, CLEAR, RESET, SELECTOR, SESS, SYSREQ`

Default: `<see text>`

The function key textboxes allow the user to select a code that will be sent to the host when the user presses a function key on the terminal. Each function key may be chosen from the same range of possible codes; however, each function key has a different default code.

The HTML Function Key Mapping Screen





The CommServer displays this version of the *Function Key Mapping* screen after the user selects *HTML* emulation for this host.

Note: *The screen shown here gives the function-key options for a host named Aline.*

The Forward, Back, and Home function-keys correspond to similar Forward, Back and Home buttons in a standard web-browser. The Reset key resets the connection between the terminal and the CommServer.

Home Listbox

Values: **F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, F13, F14, F15, F16, F17, F18, F19, F20, F21, F22, F23, F24, F25, F26, F27, F28, F29, F30**

Default: **F1**

This listbox allows the user to select the function key which requests the default page. In TekHTML browser emulation, this requests the start page defined in the Emulation Options screen (see page C-83).

Back Listbox

Values: **F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, F13, F14, F15, F16, F17, F18, F19, F20, F21, F22, F23, F24, F25, F26, F27, F28, F29, F30**

Default: **F2**

This listbox allows the user to select the function key which requests the previously-viewed page from the CommServer.

Forward Listbox

Values: **F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, F13, F14, F15, F16, F17, F18, F19, F20, F21, F22, F23, F24, F25, F26, F27, F28, F29, F30**

Default: **F3**

This listbox allows the user to select the function key which requests the next page from the CommServer. This key works only if the user has previously pressed the Back function-key.

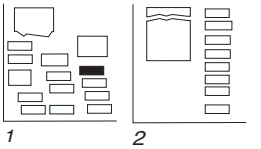
Reset Listbox

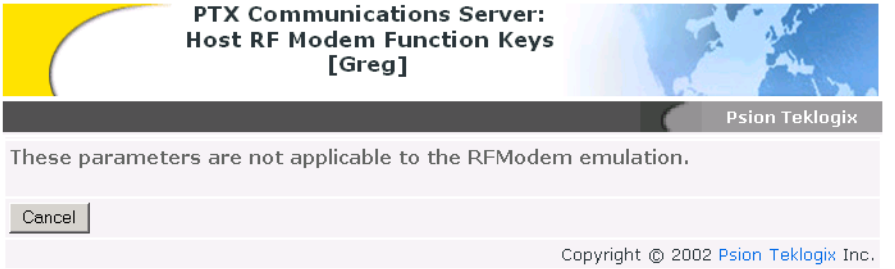
Values: **F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, F13, F14, F15, F16, F17, F18, F19, F20, F21, F22, F23, F24, F25, F26, F27, F28, F29, F30**

Default: **F30**

This listbox allows the user to select the function key which resets the connection between the terminal and the CommServer.

The Function Key Mapping Screen (2392, 9010, RF Modem, Remote Sockets)





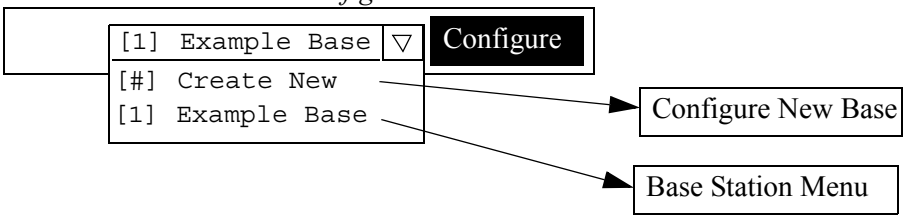
The CommServer displays this or a similar version of the *Function Key Mapping* screen after the user selects one of the *2392/Telnet, 9010/TCP/IP, RF Modem,* or *Remote Sockets* emulation/protocol combinations for this host.

Note: *The screen shown here gives the options for a host named Greg.*

These emulations do not have function key parameters.

C.2.3 CommServer Configuration: The Base Station Screens

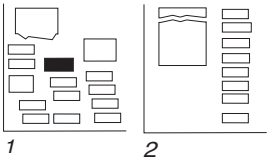
Base Stations listbox on *Configuration Main Menu*:

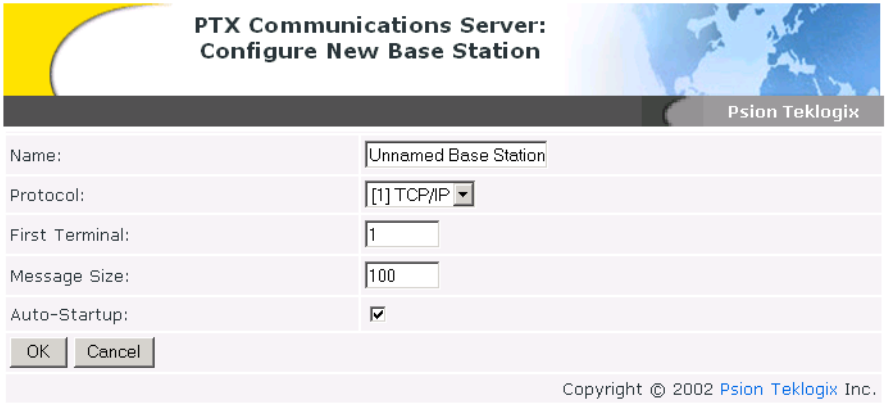


The base station screens of the CommServer are accessible from the *Base Stations* listbox and selection button.

Base stations coordinate their own radio-link timing, unlike Remote Radio Modules (RRMs), which are coordinated by the CommServer. See "CommServer Configuration: The RRM Groups Screens" on page E-140 for more information on configuring RRMs.

C.2.3.1 Configure New Base Station





In this screen, the user can set options for a new base station.

Name Textbox

Name:

Values: **<any text string>**

Default: **Unnamed Base Station**

This textbox allows the user to enter a name for the new base station.

Protocol Listbox

Type:

Values: **TCP/IP**

Default: **TCP/IP**

This listbox allows the user to select the protocol to be used for the connection to this base station. Currently, the TCP/IP protocols is available.

First Terminal Textbox

First Terminal: ☐

Values: `1 - 3840 <see text>`

Default: `1`

This textbox allows the user to specify the Psion Teklogix terminal number of the first terminal which will communicate with this base station.

Note: *This parameter has a maximum of 50 on the Model S900L software-only version of the CommServer, since this version can handle a maximum of 50 terminals.*

Message Size Textbox

Message Size: ☐

Values: `32 - 380`

Default: `100`

This textbox allows the user to specify the size (in number of characters) of the largest single message that can be passed to a terminal in a single packet. Longer messages are broken into several packets.

Notes:

- *This parameter only applies when the CommServer is using the cellular polling protocol (the* Use Cellular Protocol *checkbox in the CommServer's* Radio Link Features *screen has been checked).*
- *In systems using the Wireless LAN protocol, the maximum value for this parameter is 380. In systems using the polling protocol, the maximum value is 116.*

Auto-Startup Checkbox

Auto-Startup: ☑

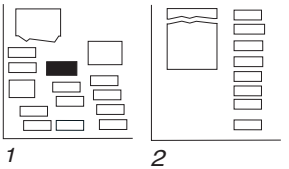
Values: `<selected>, <unselected>`

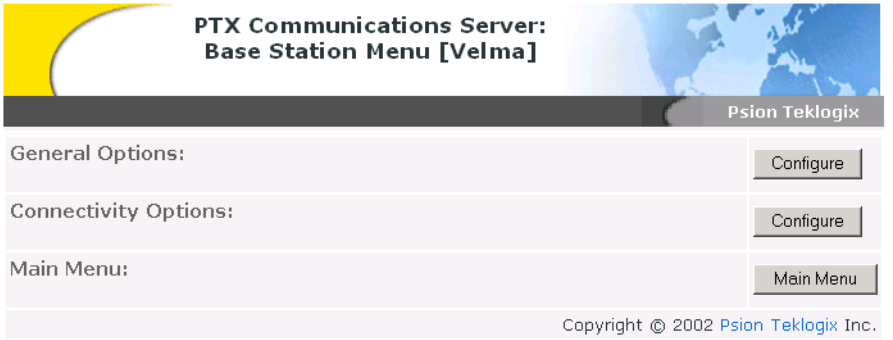
Default: `<selected>`

If this checkbox is selected, the CommServer commands the base station to start polling after the CommServer is turned on.

Note: *If the CommServer is being configured as a slave controller, the "Auto Start-up" parameter should be disabled.*

C.2.3.2 The Base Station Menu





When the user chooses an existing base station from the *Base Stations* listbox and then presses the *Configure* button, the CommServer displays the *Base Station Menu*.

Note: *The screen shown here is for a base station named Velma.*

The *Base Station Menu* has two *Configure* buttons, which are located next to the following text:

- **General Options**

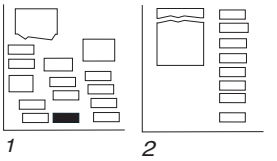
  When the user presses this *Configure* button, the CommServer displays the *Configure Base Station* screen.

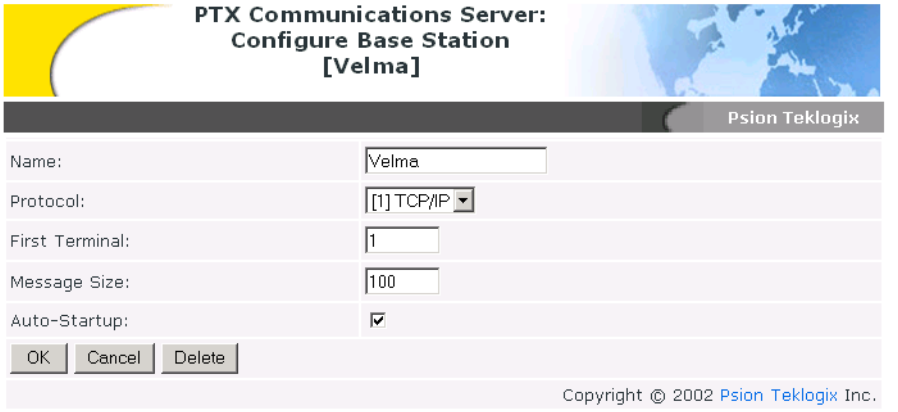
- **Connectivity Options**

  When the user presses this *Configure* button, the CommServer displays the *Connectivity Options* screen for this base station.

The *Base Station Menu* also has a *Main Menu* button. When the user presses the *Main Menu* button, the CommServer displays the *Configuration Main Menu*.

C.2.3.3 General Options





In this screen, the user can select general options for this base station. The base station may also be deleted.

Note: *The screen shown here gives the configuration options for a base station named Velma.*

Name Textbox

Name:

Values: **<any text string>**

Default: **Unnamed Base Station**

This textbox allows the user to enter a name for the base station.

Protocol Listbox

Type: ▽

Values: **TCP/IP**

Default: **TCP/IP**

This listbox allows the user to select the protocol to be used for the connection to this base station. Currently only the TCP/IP protocol is available.

First Terminal Textbox

First Terminal:

Values: **1 - 3840 <see text>**

Default: **1**

This textbox allows the user to specify the Psion Teklogix terminal number of the first terminal which will communicate with this base station.

Note: *This parameter has a maximum of 50 on the Model S900L software-only version of the CommServer, since this version can handle a maximum of 50 terminals.*

Message Size Textbox

Message Size:

Values: **32 - 380**

Default: **100**

This textbox allows the user to specify the size of the largest single message (in number of characters) that can be passed to a terminal. Longer messages are broken into several packets.

Notes:

1. *This parameter only applies when the CommServer is using the cellular polling protocol (the* Use Cellular Protocol *checkbox in the CommServer's* Radio Link Features *screen has been checked).*
2. *In systems using the Wireless LAN protocol, the maximum value for this parameter is 380. In systems using the polling protocol, the maximum value is 116.*

Auto-Startup Checkbox

Auto-Startup: ☑

Values: **<selected>, <unselected>**

Default: **<selected>**

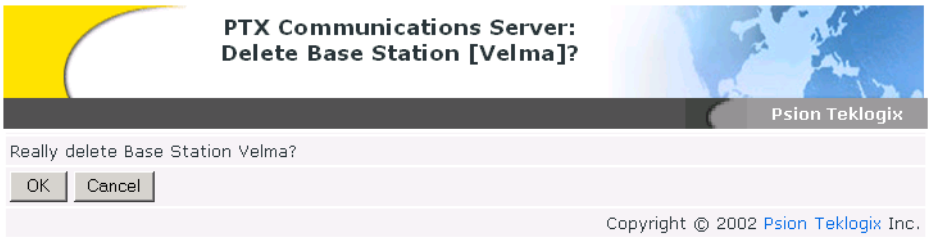
If this checkbox is selected, the CommServer will command the base station to start polling after the CommServer is turned on.

Note: *If the CommServer is being configured as a slave controller, the "Auto Startup" parameter should be disabled.*

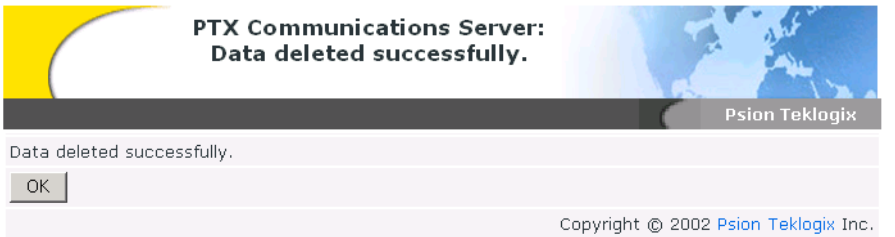
Delete Button

Delete

The *Delete* button allows the user to delete the currently-displayed base station connection. When it is pressed, the CommServer displays a confirmation screen:

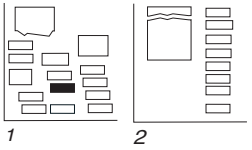


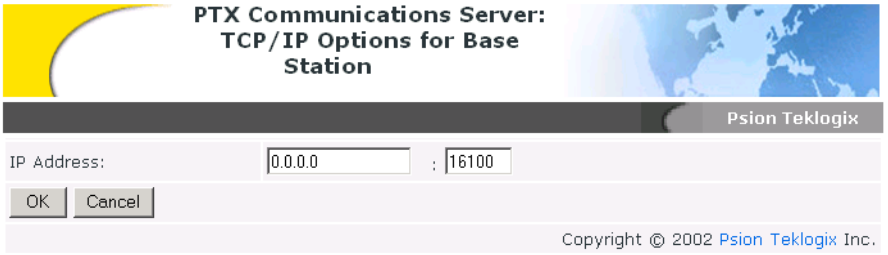
If the user presses the *Cancel* button on this screen, the CommServer displays the *Configure Existing Base Station* screen again. If the user presses the *OK* button, the CommServer removes the interface's data from the configuration cache and displays a confirmation screen:



When the user presses the *OK* button in this confirmation screen, the CommServer displays the *Configuration Main Menu*. The choice for the deleted base station connection is no longer present in the *Base Stations* listbox.

C.2.3.4 Connectivity Options





The CommServer displays the *Connectivity Options* screen after the user has selected pressed the *Connectivity Options* button.

IP Address and Port Textboxes

IP Address: [ ] : [ ]

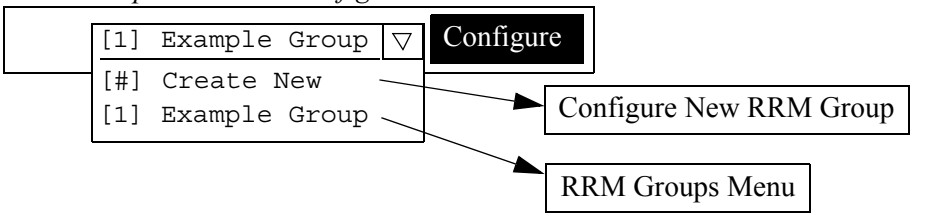
Values: **<see text>**

Default: **IP Address: <none>; Port: 16100**

These textboxes allow the user to enter an IP address and port number for the base station. The IP address may be any valid IP address; the port number can range from 1024 to 32767.

C.2.4 CommServer Configuration: The RRM Groups Screens

RRM Groups listbox on *Configuration Main Menu*:



The RRM Groups screens of the CommServer are accessible from the *RRM Groups* listbox and selection button.

The RRMs in each group transmit on the same frequency alternately. The CommServer coordinates the transmissions so that no RRMs transmit at the same time. This is different from base stations, where the timing of the radio transmissions is controlled only by the base stations themselves. See "CommServer Configuration: The Base Station Screens" on page E-132 for more information on configuring base stations.

To add RRMs, first create a new RRM group through the *Configure New RRM Group* screen (page C-140):

1. Select the Create New option from the *RRM Groups* dropdown menu.
2. Press the Configure button. The *Configure New RRM Group* screen (page C-142) appears.
3. Fill in the parameters for the new RRM group.
4. Press the OK button. The *Confirmation* screen appears.
5. Press the OK button. The Main Menu screen appears again.

Next, add individual RRMs to the newly-created group:

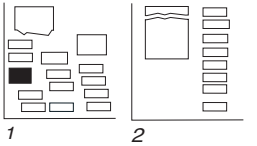
6. Select the RRM group from the *RRM Groups* dropdown menu. Press the Configure button. The *Configure New RRM Group* screen (page C-142) appears.

7. Press the Configure button. The *RRM Group Menu* screen (page C-149) appears.
8. Select the Create New option from the *RRMs* dropdown menu.
9. Press the Configure button. The *Configure New RRM* screen (page C-153) appears.
10. Fill in the parameters for the new RRM.
11. Press the OK button. The *Confirmation* screen appears.
12. Press the OK button. The *RRM Group Menu* screen appears again.

At this point more RRMs can be added to the group.To add another RRM group, return to the main menu and select the Create New option from the *RRM Groups* dropdown menu again.

RRM groups and RRMs use narrowband FM radio. The performance of such groups depends critically on the radio parameters, and these interact complexly. Psion Teklogix provides a parameter-analysis utility to help the adiminstrator set up the groups. This utility is described in Section C.2.4.6, "Analyze RRM Group" (see page C-156).

C.2.4.1 Configure New RRM Group



PTX Communications Server:
Configure New RRM Group

Psion Teklogix

Name:	Unnamed RRM Group
Communication Protocol:	TCP/IP
Enabled:	☑
Auto-Startup:	☑
Polling Protocol Parameters:	
Number of Poll Windows:	3
Size of Poll Windows:	8
Maximum Message Segment Size:	100
Number of Retries:	3
Collision Size:	6
Free Window Factor:	0
Message Mode Limit:	4
Callsign Period:	0
Callsign String:	Teklogix
Radio Parameters:	
Sync Delay:	28
Remote Txon:	13
Active Channel:	1
Group Parameters:	
Group 1:	
Group 2:	

OK Cancel

Copyright © 1999, 2000 Teklogix Inc.

In this screen, the user can set options for a new RRM group.

All of the RRMs in a group operate on the same frequency. If there is more than one RRM in the group, the CommServer causes them to transmit alternately.

Each RRM must be a member of an RRM group; there may be more than one RRM group configured in the CommServer. An RRM group may contain only one RRM, and may contain a maximum of four RRMs.

Name Textbox

Name: [ ]

Values: **<any text string>**

Default: **Unnamed RRM Group**

This textbox allows the user to enter a name for the new RRM group.

Protocol Listbox

Type: [▽]

Values: **TCP/IP**

Default: **TCP/IP**

This listbox allows the user to select the protocol to be used for the connection to this RRM group. Currently, the TCP/IP protocol is available.

Enabled Checkbox

Enabled: ☑

Values: **<enabled>, <disabled>**

Default: **<enabled>**

If this parameter is enabled, the CommServer uses the RRMs in this group.

Auto Startup Checkbox

Auto Startup: ☑

Values: **<enabled>, <disabled>**

Default: **<enabled>**

If this parameter is enabled, the CommServer establishes communication with the RRMs in this RRM group when it boots, and starts polling automatically.

If this parameter is disabled, the CommServer establishes communication with the RRMs in this group when it boots, but does not start polling in this RRM group until a start polling message (0S) is received from the host.

Polling starts if at least one of the RRMs in the RRM group is operating when the CommServer boots.

Polling Protocol Parameters

Number of Poll Windows Textbox

Number of Poll Windows: ☐

Values: **2 - 4**

Default: **3**

This textbox allows the user to specify the number of poll windows in which the RRM listens for terminal responses after sending a poll.

Warning: ***THIS PARAMETER IS PRE-CONFIGURED FOR YOUR SYSTEM, AND SHOULD NOT BE CHANGED without a proper understanding of how it affects the radio link!***

Size of Poll Windows Textbox

Size of Poll Windows: ☐

Values: **5 - 32**

Default: **8**

This textbox allows the user to specify the size of the poll windows in which the RRMs of this RRM group listen for terminal replies.

Warning: ***THIS PARAMETER IS PRE-CONFIGURED FOR YOUR SYSTEM, AND SHOULD NOT BE CHANGED without a proper understanding of how it affects the radio link!***

Maximum Message Segment Size Textbox

Maximum Message Segment Size: [ ]

Values: `32 - 116`

Default: `100`

This textbox allows the user to specify the size of the largest message segment, in bytes, that will be sent over the Psion Teklogix radio network. Larger messages are broken into parts.

Warning: ***THIS PARAMETER IS PRE-CONFIGURED FOR YOUR SYSTEM, AND SHOULD NOT BE CHANGED without a proper understanding of how it affects the radio link!***

Number of Retries Textbox

Number of Retries: [ ]

Values: `1 - 7`

Default: `3`

This textbox allows the user to specify the number of times the RRM retransmits a message to a terminal, after receiving no acknowledgement from the terminal, before it declares the terminal offline.

Collision Size Textbox

Collision Size: [ ]

Values: `3 - 10`

Default: `6`

This textbox allows the user to specify the smallest number of characters of noise received by the RRM, that will be interpreted as interfering transmissions from Psion Teklogix equipment. When this threshold is exceeded, the RRM starts collision resolution.

Warning: ***THIS PARAMETER IS PRE-CONFIGURED FOR YOUR SYSTEM, AND SHOULD NOT BE CHANGED without a proper understanding of how it affects the radio link!***

Free Window Factor Textbox

Free Window Factor: [ ]

Values: `0 - 7`

Default: `0`

This textbox allows the user to specify the probability that the RRM will include a free window in its poll, during which any terminal may transmit.

Warning: ***THIS PARAMETER IS PRE-CONFIGURED FOR YOUR SYSTEM, AND SHOULD NOT BE CHANGED without a proper understanding of how it affects the radio link!***

Message Mode Limit Textbox

Message Mode Limit: [ ]

Values: `0 - 7`

Default: `4`

This textbox allows the user to specify the probability of including a message-mode poll in its poll transmission.

Warning: ***THIS PARAMETER IS PRE-CONFIGURED FOR YOUR SYSTEM, AND SHOULD NOT BE CHANGED without a proper understanding of how it affects the radio link!***

Callsign Period Textbox

Callsign Period: [ ]

Values: `0 - 60`

Default: `0`

This textbox allows the user to specify the amount of time between transmissions of the callsign. This parameter is in minutes. A value of 0 (zero) indicates that no callsign is transmitted.

Callsign Text Textbox

Callsign Text: [ ]

Values: **<text>**

Default: **Teklogix**

This textbox allows the user to specify the text to be transmitted as the RRM's callsign. The text is transmitted as Morse code.

Radio Parameters

Because some of the radio parameters are identical for a given group of timeplexed RRMs, they may be configured by the user once on the CommServer; the CommServer then passes them to the RRMs in the group. These parameters include the synchronization delay (Sync Delay), the remote transmit on-time (Remote TxOn), the channel number to be used (Active Channel), and the size of the poll header.

Although the TRX7370 narrow band FM radio in each RRM in the group is configured separately, the CommServer assumes that they will be configured the same. To ensure this, the CommServer looks at certain parameters returned by each of the RRMs. These parameters include the radio baud rate and the transmit-on time.

These parameters are compared against the values returned by other RRMs within the same group. Error messages are displayed should these values not match, but the worst-case value is then chosen for use.

Warning: ***THE RADIO PARAMETERS ARE PRE-CONFIGURED FOR YOUR SYSTEM, AND SHOULD NOT BE CHANGED without a proper understanding of how it affects the radio link!***

Sync Delay Textbox

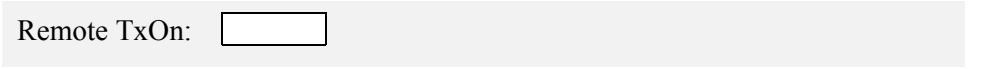
Sync Delay: [ ]

Values: **3 - 45**

Default: **28**

This textbox allows the user to specify the number of delay characters inserted between the RRM's transmission and the first response window.

Remote TxOn Textbox

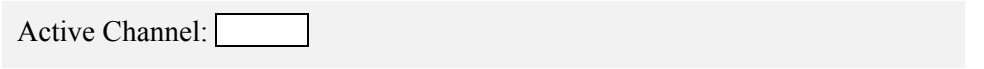


Values: `3 - 60`

Default: `13`

This textbox allows the user to specify the number of fill characters sent by the terminals to their radios before the terminals send message data.

Active Channel Textbox



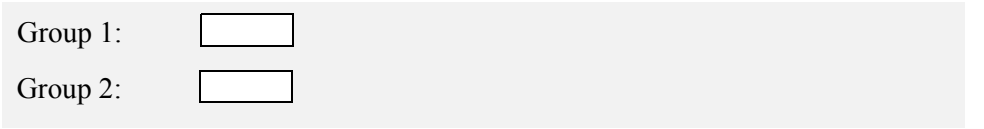
Values: `1 - 20`

Default: `1`

This textbox allows the user to specify the radio channel to be used by all the RRMs in the RRM group.

Group Parameters

Group Textboxes



Values: `<see text>`

Default: `<none>`

These textboxes allow the user to specify RRM *subgroups*.

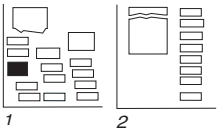
If the coverage areas of two or more of the RRMs in this RRM group do not overlapping, the non-overlapping RRMs may be assigned to the same subgroup. They will then poll at the same time. This improves system response time and reduces the amount of signalling on the network.

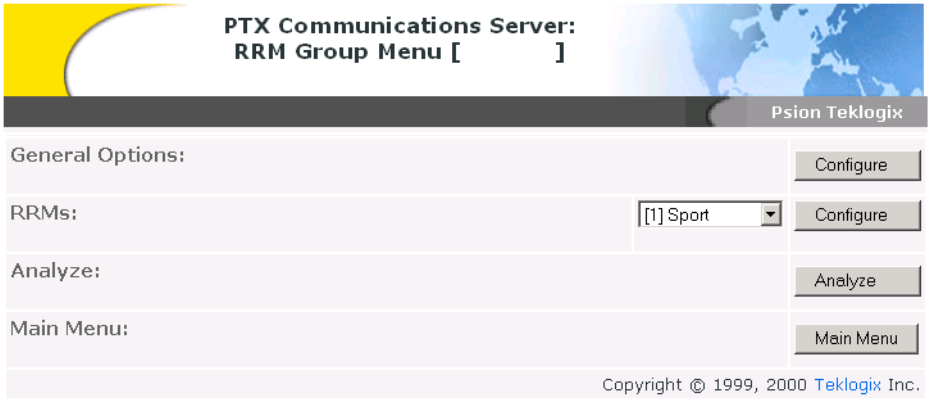
As an example, if the RRM group has 3 RRMs, and RRMs 1 and 3 don't overlap, RRMs 1 and 3 may be placed in one subgroup. They will then poll simultaneously. RRM 2 may be placed in another subgroup. Polling then alternates between the two subgroups.

To configure a subgroup, place the numbers of the RRMs in the textbox for that subgroup. The numbers correspond to the numbers of the RRMs named in the RRM list on the RRM Group Menu (see page C-149). For instance, "13" in the textbox for subgroup 1 places RRMs 1 and 3 in that subgroup.

RRMs that are not assigned to subgroups poll individually, after all of the RRMs in the subgroups poll.

C.2.4.2 The RRM Group Menu





When the user chooses an existing RRM group from the *RRM Groups* listbox and then presses the *Configure* button, the CommServer displays the *RRM Group Menu*.

The *RRM Group Menu* has two *Configure* buttons, which are located next to the following text:

- **General Options**

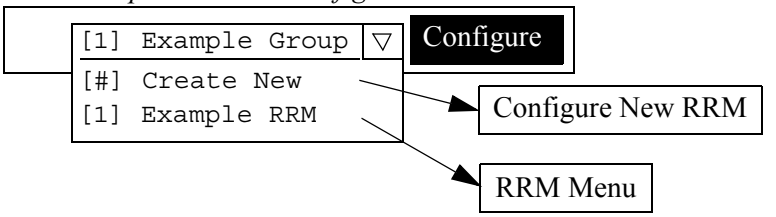
  When the user presses this *Configure* button, the CommServer displays the *Configure Existing RRM Group* screen.

- **RRMs**

RRM Groups: ▽ Configure

When the user selects the name of an existing RRM from the listbox, then presses this *Configure* button, the CommServer displays the *RRM Options* screen for that RRM.

RRM Groups listbox on *Configuration Main Menu*:



The RRM Groups screens of the CommServer are accessible from the *RRM Groups* listbox and selection button.

There is also a selection in the listbox, *Create New*, for adding a new RRM.

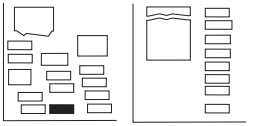
There is also an Analyze button:

Analyze

When the user presses the *Analyze* button, the CommServer displays a screen listing parameters for the RRM system. See "Analyze RRM Group" on page C-156.

At the bottom, there is a *Main Menu* button. When the user presses the *Main Menu* button, the CommServer displays the *Configuration Main Menu*.

C.2.4.3 Configure Existing RRM Group



PTX Communications Server:
Configure RRM Group [Daphne]

Psion Teklogix

Name:	Daphne
Communication Protocol:	TCP/IP
Enabled:	☑
Auto-Startup:	☑
Polling Protocol Parameters:	
Number of Poll Windows:	3
Size of Poll Windows:	8
Maximum Message Segment Size:	100
Number of Retries:	3
Collision Size:	6
Free Window Factor:	0
Message Mode Limit:	4
Callsign Period:	0
Callsign String:	Teklogix
Radio Parameters:	
Sync Delay:	28
Remote Txon:	13
Active Channel:	1
Group Parameters:	
Combination 1:	
Combination 2:	

OK Cancel Delete

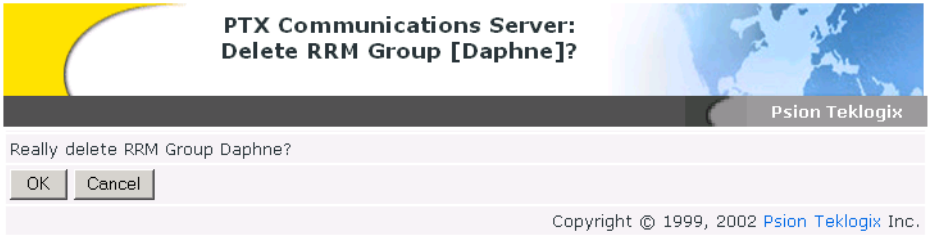
In this screen, the user can select general options for this RRM group.

The options in this screen are the same as the options in the *Create New RRM Group* screen (see "Configure New RRM Group" on page C-142).

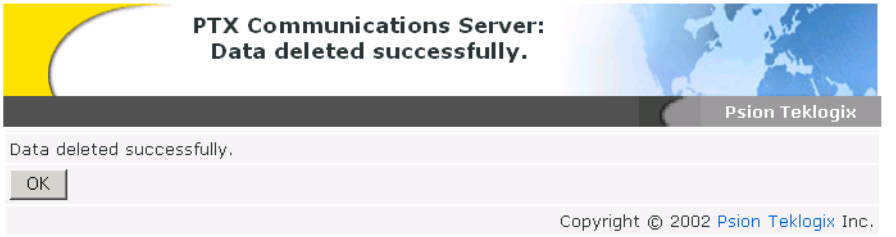
There is also a *Delete* button:

Delete Button

The *Delete* button allows the user to delete the currently-displayed RRM group. When it is pressed, the CommServer displays a confirmation screen:

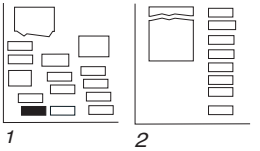


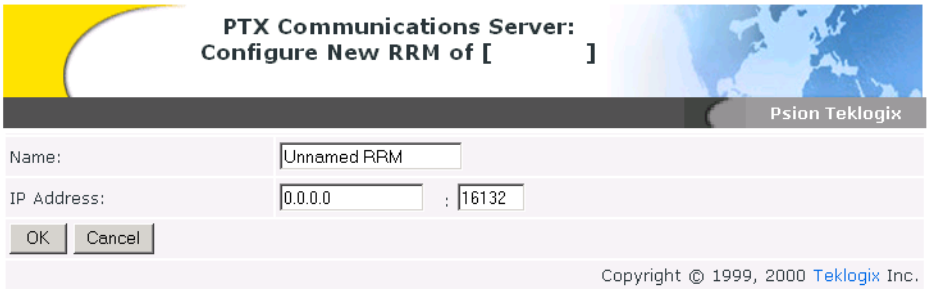
If the user presses the *Cancel* button on this screen, the CommServer displays the *Configure RRM Group* screen again. If the user presses the *OK* button, the CommServer removes the RRM group's data from the configuration cache and displays a confirmation screen:



When the user presses the *OK* button in this confirmation screen, the CommServer displays the *Configuration Main Menu*. The choice for the deleted RRM connection is no longer present in the *Configure RRM Group* listbox.

C.2.4.4 Configure New RRM





The CommServer displays this *Configure RRM* screen after the user has selected an existing RRM and pressed the *Configure* button.

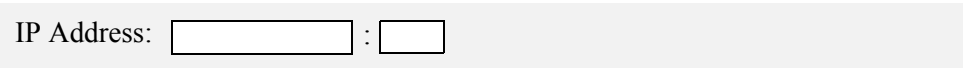
Name Textbox

Values: **<see text>**

Default: **Unnamed RRM**

This textbox allows the user to enter a name for the new RRM.

IP Address And Port Textboxes



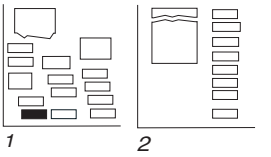
Values: **<see text>**

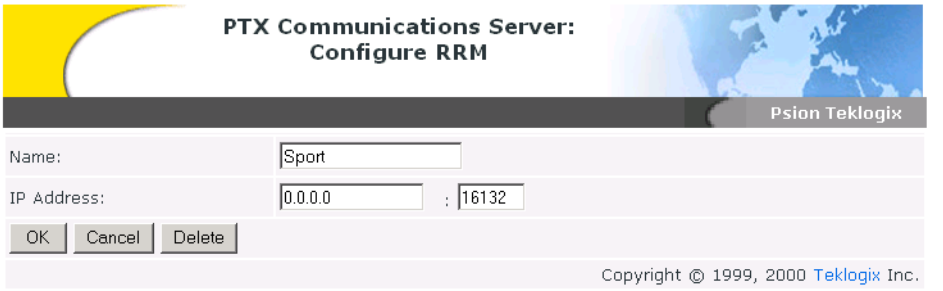
Default: **IP Address: <none>; Port: 16132**

These textboxes allow the user to enter the IP address and port number of the new RRM. The IP address may be any valid IP address; the port number can range from 1024 to 32767.

Note: *The 9150 must be in RRM mode, and must have the same port number configured. It listens to this port for incoming data from the CommServer, which includes the CommServer's IP address.*

C.2.4.5 Configure Existing RRM





The CommServer displays this *Configure Existing RRM* screen after the user has selected an existing RRM from the listbox and pressed the *Configure* button.

Name Textbox

Values: **<see text>**

Default: **Unnamed RRM**

This textbox allows the user to enter a name for the RRM.

IP Address And Port Textboxes

IP Address: [ ] : [ ]

Values: **<see text>**

Default: **IP Address: <none>; Port: 16132**

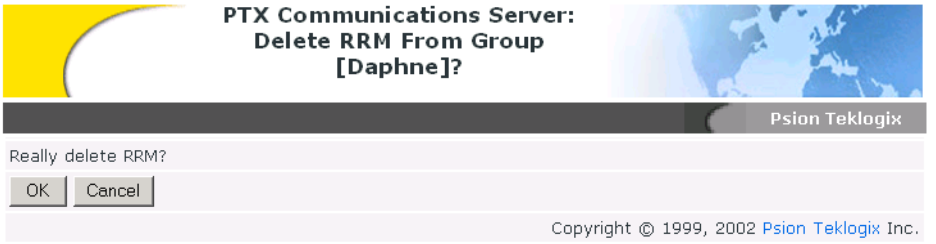
These textboxes allow the user to enter the IP address and port number of the RRM. The IP address may be any valid IP address; the port number can range from 1024 to 32767.

Note: *The 9150 must be in RRM mode, and must have the same port number configured. It listens to this port for incoming data from the CommServer, which includes the CommServer's IP address.*

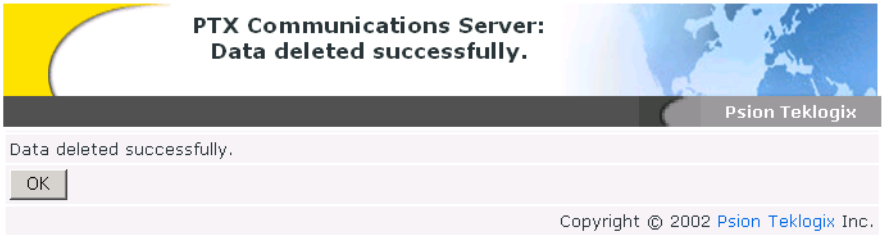
Delete Button

Delete

The *Delete* button allows the user to delete the RRM. When it is pressed, the CommServer displays a confirmation screen:

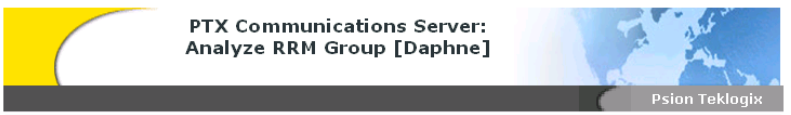


If the user presses the *Cancel* button on this screen, the CommServer displays the *Configure Existing RRM* screen again. If the user presses the *OK* button, the CommServer removes the RRM's data from the configuration cache and displays a confirmation screen:



When the user presses the *OK* button in this confirmation screen, the CommServer displays the *RRM Group Menu*. The choice for the deleted RRM is no longer present in the *RRMs* listbox.

C.2.4.6 Analyze RRM Group



Name:	Daphne	
Radio-Link Protocol:	EXT (cellular)	
Polling Protocol Parameters:		
Number of Poll Windows:	3	
Size of Poll Windows:	8	characters
Maximum Message Segment Size:	100	characters
Free Window Factor:	0	
Message Mode Limit:	4	
Radio Parameters:		
Sync Delay:	28	characters
Remote Txon:	13	characters
Baud Rate:	9600	
Modulation:	2-level	
RRM Radios:	TRX7370	
Terminal Radios:	mixed	
Group Parameters:		
Combination 1:		
Combination 2:		
Results:		
Errors:		
Warnings:		
Number of RRMs:		
RRM Combination Cycle:		
Poll Timeout in Terminals (average load):		ticks (1/60s)
Poll Timeout in Terminals (maximum load):		ticks (1/60s)

OK

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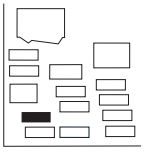
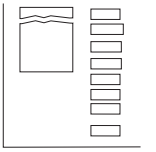

1


2

The CommServer displays this *Analyze RRM Group* screen after the user has pressed the *Analyze* button. This screen is created by the CommServer after it analyzes the current RRM configuration.

This screen presents the configured parameters for the RRM groups on this CommServer. It is divided into several parts:

General Parameters

This section gives the name of the RRM group, and lists the protocol it uses.

Polling Protocol Parameters

This section lists the configured parameters for the polling protocol:. These parameters include:

- **Number of Poll Windows**
- **Size of Poll Windows**
- **Maximum Message Segment Size**
- **Free Window Factor**
- **Message Mode Limit**

See "Polling Protocol Parameters" on page C-144 for descriptions and possible ranges for these parameters.

Radio Parameters

This section lists the configured parameters for the RRM groups' radios. All RRMs in the group use the same radio configuration; however, the actual radio hardware in the bases and terminals may differ. These radio parameters include:

- **Sync Delay**
- **Remote TxOn**
- **Baud Rate**
  This changeable parameter indicates the selected bit rate for the radios used in this RRM group.
- **Modulation**
  This changeable parameter indicates the type of narrow-band FM modulation used by the radios in this RRM group. All radios oin the group must use the

same modulation. Available modulations include "two-level" and "four-level". Not all radios support all modulations; in particular, older radios only support the two-level modulation.

Two-level modulation supports bit rates of 4800 and 9600 bits per second. Four-levelmodulation supports bit rates of 9600 and 19 200 bits per second. The analyzer constrains the available bit rates to those supported by the selected modulation.

- **RRM Radios**
  This parameter ndicates the type of radios installed in the RRMs.
- **Terminal Radios**
  This changeable parameter indicates the type of radios installed in the terminals with which the RRMs will be communicating.

See "Radio Parameters" on page C-147 for descriptions and possible ranges for these parameters.

Group Parameters:

This section lists which RRMs belong to which RRM group.

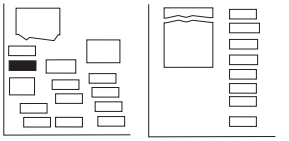
- Combination 1
- Combination 2

Results:

This section lists the results of the analysis.

- **Errors**
  This section lists problems which will cause this RRM-group configuration to not work.
- **Warnings**
  This section lists less-serious problems than the Errors section. This RRM-group configuration will work, but it is not optimal.
- **Number of RRMs**
  The number of RRMs in this group.
- **RRM Combination Cycle**
  This parameter shows the polling arrangement of the RRMs.
- **Poll Timeout in Terminals (average load),**
  Poll Timeout in Terminals (maximum load)
  These two parameters show how the RRMs will perform under differing loads.

C.2.5 CommServer Configuration: Radio Link Features



PTX Communications Server:
Radio Link Features

Psion Teklogix

Operate in Cellular Mode:	☑
Poll ID:	35
Polling Protocol Terminal Timeout:	60
Percent Polling Protocol Terminal Timeout:	75
Direct TCP Connections for TekTerm:	☐
Direct TCP Check Duplicate Terminal Number:	☑
Expiration period (in days) for Automatic Radio Address and Terminal Number:	2
Automatic Radio Address assignment range:	1 ... 1024

Automatic Terminal Number assignment Help

Group:	Range:	Comment:
Group 1 (Default)	1 ... 1024	
Group 2	0 ... 0	
Group 3	0 ... 0	
Group 4	0 ... 0	
Group 5	0 ... 0	

OK Cancel

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Operate In Cellular Mode Checkbox

Operate in Cellular Mode: ☑

Values: **<selected>, <unselected>**

Default: **<selected>**

If this checkbox is selected, the base stations connected to this CommServer operate in cellular mode, enabling terminals to move seamlessly between base stations, switching channels if necessary.

Poll ID Textbox

Poll ID: [ ]

Values: `0 - 15`

Default: `0`

The *poll ID* is a unique number for this CommServer. It is used in the poll header to identify the CommServer when it polls terminals. This is useful in systems with more than one CommServer.

Polling Protocol Terminal Timeout Textbox

Polling Protocol Terminal Timeout: [ ]

Values: `0 - 60`

Default: `60`

This parameter specifies the time (in minutes) that a terminal is allowed to be offline before the CommServer removes it from the system. When the terminal resumes activity, it sends a "warm initialization" message to the CommServer to re-establish communication.

This parameter is related to the Percent Polling Protocol Terminal Timeout parameter below; it is used in systems with network timeplexing and RRMs.

Percent Polling Protocol Terminal Timeout Textbox

Percent Polling Protocol Terminal Timeout: [ ]

Values: `50 - 90`

Default: `75`

This parameter specifies the time that a terminal is allowed to be inactive before the CommServer declares it offline. This time is expressed as a *percentage* of the Polling Protocol Terminal Timeout parameter above. Thus, if the Timeout parameter is 60 and this parameter is 75, the CommServer declares a terminal offline after 45 minutes of inactivity (45 minutes is 75 percent of 60 minutes).

An offline terminal is still considered part of the Psion Teklogix system; messages to it are queued at the CommServer. In this example, the terminal remains offline until it notifies the CommServer that it is online, or until the CommServer removes it from the system entirely, after 60 minutes of inactivity.

This parameter is used in systems with network timeplexing and RRMs.

Direct TCP Connections For TekTerm Checkbox

Direct TCP Connections for TekTerm: ☑

Values: **<selected>, <unselected>**

Default: **<selected>**

If this checkbox is selected, terminals using TekTerm (such as the 7035, 8255, and 8260) on the TCP/IP network may connect directly to the CommServer through access points such as the Psion Teklogix 9150.

Direct TCP Check Duplicate Terminal Number Checkbox

Direct TCP Check Duplicate Terminal Number: ☑

Values: **<selected>, <unselected>**

Default: **<selected>**

If this checkbox is selected, the Communication Server will check for duplicate terminal numbers among those terminals connecting by Direct TCP if the auto-terminal ID feature is enabled.

Expiration period... Textbox

Expiration period (in days) for Automatic Radio Address and Terminal Number: ☐

Values: **50 - 90**

Default: **75**

This parameter specifies the amount of time before automatically-assigned rado addresses and terminal numbers expire.

Automatic Radio Address Textboxes

Automatic Radio Address assignment range: [ ] ... [ ]

Values (lower, upper): `0 - 3840, 0 - 3840`

Default (lower, upper): `1024, 2084`

The *Automatic Radio Address* textboxes specify the lower and upper allowed values of radio addresses that will be assigned automatically to terminals when the Remote Sockets feature is used.

Note: *This parameter has a upper value of 50 on the Model S900L software-only version of the CommServer, since this version can handle a maximum of 50 terminals. The defaults are 1 and 50 respectively in this case.*

Important: ***A range of 0 ... 0 signifies that this feature is disabled. Do not configure a range starting with zero and ending with a number greater than zero.***

Automatic Terminal Number Assignment Textboxes

Terminal numbers may be assigned automatically to up to five groups of terminals. These groups are listed in this section, starting with Group 1, the default group. Each group has the following parameters:

Range: [ ] ... [ ]

Values (lower, upper): `0 - 3840, 0 - 3840`

Default (lower, upper): `0, 0`

Comment: [ ]

The *Range* parameter specifies specify the lower and upper allowed values of terminal numbers that will be assigned automatically to terminals in the group. The Comment parameter allows the administrator to add a note about the group.

Note: *This parameter has a upper value of 50 on the Model S900L software-only version of the CommServer, since this version of the software can handle a maximum of 50 terminals.*

Important: ***A range of 0 ... 0 signifies that this feature is disabled. Do not configure a range starting with zero and ending with a number greater than zero.***

Help Button

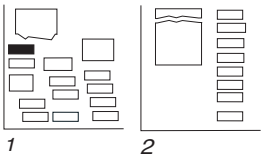
Help

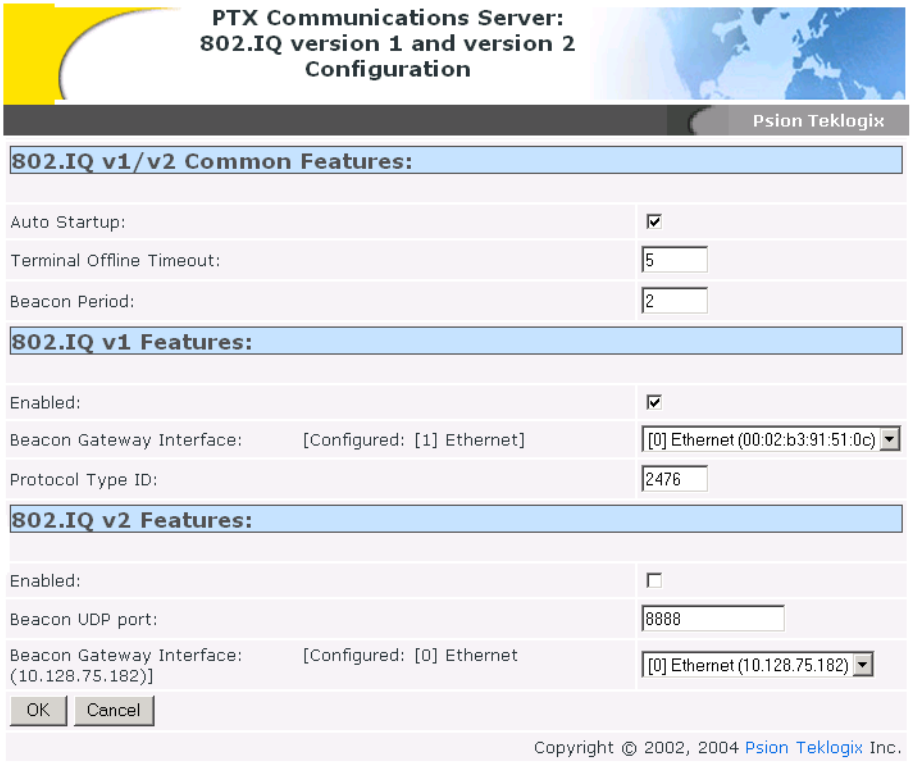
The *Help* button links to a help screen that clarifies the use of the Automatic Terminal Number Assignment feature.

Notes:

1. *The terminal numbers configured through the Terminal Range parameters for each host emulation must be within this range if that host is to use automatically-assigned terminal numbers.*
2. *The Total Number of Terminals parameter in the Miscellaneous System Options screen must be larger than the highest upper value (in any group) of this parameter.*
3. *Terminals not assigned to a group will poll after those in groups.*

C.2.6 CommServer Configuration: 802.IQ v1 And v2 Features





802.IQ v1/v2 Common Features

Auto Startup Checkbox

Auto Startup: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

When checked, this parameter enables the Psion Teklogix' 802.IQ protocol (v1 or v2) to start automatically when the CommServer is rebooted.

Terminal Offline Timeout Textbox

Terminal Offline Timeout: [ ]

Values: **1 - 240**

Default: **5**

This parameter sets the time (in minutes) before the 9500 will declare an 802.IQ terminal offline.

Beacon Period Textbox

Beacon Period: [ ]

Values: **1 - 20**

Default: **2**

This parameter sets the duration (in seconds) of a beacon.

802.IQ v1 Features

Enabled Checkbox

Enabled: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

When checked, this parameter enables 802.IQ v1.

Beacon Gateway Interface Listbox

Beacon Gateway Interface: [Configured: [0] Ethernet] [▽]

Values: **<index> Ethernet <MAC address>**

Default: **[0] Ethernet <MAC address>**

This parameter specifies the physical network interface through which the CommServer will send 802.IQ v1 beacon packets. (The CommServer may have up to two Ethernet interfaces.) The interface is identified by its index number and MAC address.

Protocol Type ID Textbox

Protocol Type ID: [ ]

Values: **5001 - 65535**

Default: **2476**

This parameter sets the protocol type ID which which the CommServer will label 802.IQ v1 beacon packets.

802.IQ v2 Features

Enabled Checkbox

Enabled: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

When checked, this parameter enables 802.IQ v2.

An 802.IQ v2 beacon is a broadcast sent out to all 802.IQ v2-enabled terminals. It allows the 802.IQ v2 terminals to detect the CommServer and obtain the CommServer's IP address.

The beacon allows terminals to determine when they have roamed between base stations. It also enables a terminal to determine whether the base station or CommServer was rebooted, and if so, how to recover.

Beacon UDP Port Textbox

Beacon UDP port: [ ]

Values: **5001 - 65535**

Default: **8888**

This parameter sets the port number through which the CommServer will send beacon packets.

Beacon Gateway Interface Listbox

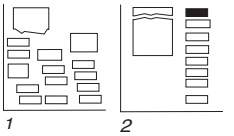
Beacon Gateway Interface: [Configured: [0] Ethernet (IP Address)] [▽]

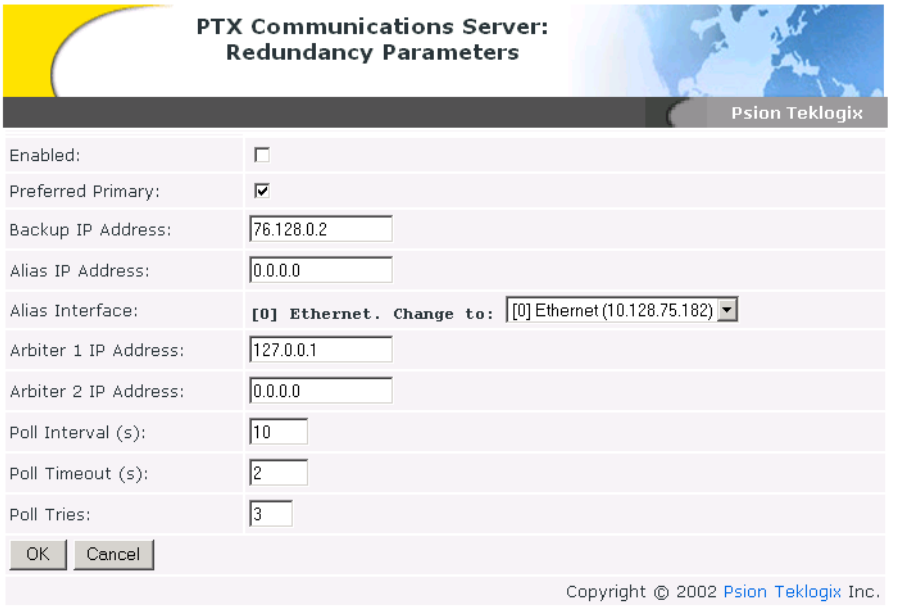
Values: **<index> Ethernet <IP Address>**

Default: **[0] Ethernet <IP Address>**

This parameter specifies the physical network interface through which the CommServer will send 802.IQ v2 beacon packets. (The CommServer may have up to two Ethernet interfaces.) The interface is identified by its index number and IP address.

C.2.7 Redundancy Options





In this screen, the user can set various options for redundant operation of the CommServer.

This feature enables two similarly-configured CommServers to operate in parallel. One CommServer is designated as the *primary* CommServer, and manages communication to the rest of the Psion Teklogix system. The other CommServer is designated as the *secondary* CommServer, and remains idle. Both CommServers communicate with an *arbiter*, another node which serves as a reference on the network.

Both of the CommServers must be connected to the network, and each CommServer is aware of the other's IP address. The secondary CommServer polls the primary CommServer, and the primary CommServer responds, exchanging information about their status. There may not be more than one secondary CommServer.

If the secondary CommServer cannot communicate with the primary CommServer, but can communicate with the arbiter, it assumes that the primary CommServer is not working, becomes primary, and assumes control of the Psion Teklogix network.

When the first CommServer comes online again, it assumes secondary status; the second CommServer continues as the primary.

If the CommServers cannot communicate with the arbiter, they assume that the network is not working.

Note: *When control of the Psion Teklogix system is passed from one CommServer to the other CommServer, sessions between hosts and terminals are closed, and terminals and bases are reset.*

Both CommServers must be configured identically, with the exception of their own IP addresses, and the Backup IP Address parameter (the address of the other CommServer).

Important: ***The 'TCP Direct Connections To Host' parameter must be enabled for Redundancy to work. This parameter can be found on the Radio Link Features screen.***

Enabled Checkbox

Enabled: ☐

Values: **<selected>, <unselected>**

Default: **<unselected>**

When this checkbox is selected, the CommServer uses the Redundancy feature. A second CommServer (appropriately configured) and an arbiter must be present on the network for the feature to operate properly.

Preferred Primary Checkbox

Preferred Primary: ☑

Values: **<selected>, <unselected>**

Default: **<selected>**

This checkbox indicates whether this CommServer is the preferred primary CommServer.

Backup IP Address Checkbox

Backup IP Address:

Values: **<any valid IP address>**

Default: **0.0.0.0**

This parameter contains the address of the other CommServer with which this CommServer communicates.

Alias IP Address Textbox

Alias IP Address:

Values: **<any valid IP address>**

Default: **0.0.0.0**

This parameter contains the alias IP address for this CommServer and the other CommServer in the redundancy system. This address must be the same on both the primary and secondary CommServers.

Devices on the network may have more than one IP address corresponding to their network interface (and hardware address). The primary CommServer presents the alias address to the network as well as its own unique IP address. The secondary CommServer only presents its own unique IP address to the network.

When the secondary CommServer becomes the primary, it starts to use the alias IP address. The old primary CommServer, which becomes the secondary, stops using the alias IP address.

Devices on the network which communicate directly with the Psion Teklogix network CommServer's IP address, such as terminals using Direct TCP, may communicate with the alias IP address. They will then communicate with whichever of the two redundant CommServers is the primary.

The *TCP Direct Connections To Host* check-box in the *Radio Link Features* screen must be checked in this case.

Interface Number Listbox

[0] Ethernet. Change to: ▽

Values: **<indexes and IP addresses of currently-installled interfaces>**

Default: **<index 0 and IP address of interface 0>**

This listbox allows the user to specify the interface number through which this 9500 communicates with the other 9500, if redundancy is used.

Arbiter IP Address Textbox

Arbiter IP Address:

Values: **<any valid IP address>**

Default: **0.0.0.0**

This parameter contains the address of a device on the network which is known to be reliable. Both CommServers ping this device; if they receive no reply, they assume that the network is not operating.

This address should be the same on both the primary and secondary CommServers.

Poll Interval, Poll Timeout, And Poll Tries Textboxes

Poll Interval:

Values: **1 - 1000**

Default: **10**

Poll Timeout:

Values: **1 - 10**

Default: **2**

Poll Tries:

Values: **2 - 7**

Default: **3**

These three parameters, Poll Interval, Poll Timeout, and Poll Tries, are closely related.

This CommServer, when acting as the secondary CommServer, polls the primary CommServer at intervals specified by the Poll Interval parameter.

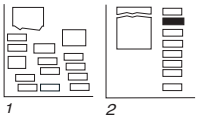
After each poll, this CommServer waits for a reply. It waits for a time specified by the Poll Timeout parameter. If there is no reply during this interval, the CommServer sends another poll to the other CommServer.

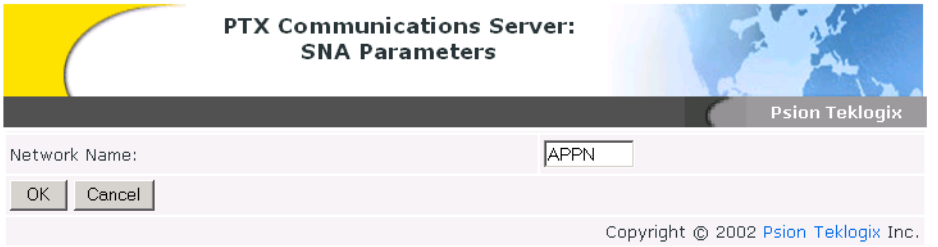
The total number of polls sent while this CommServer waits for the other CommServer to respond is specified by the Poll Tries parameter.

If no response is received to any of the polls, this CommServer then pings the arbiter. If the CommServer receives a ping reply from the arbiter, but cannot contact the other CommServer, it assumes that the other CommServer is off the network, becomes primary, and takes control of the Psion Teklogix system.

If this CommServer cannot reach the other CommServer or the arbiter, it assumes that the network is not working, and remains in secondary mode.

C.2.8 System Configuration: SNA Parameters





In this screen, the user can set an option for the CommServer's SNA operation.

Note: *Most of the SNA options in the CommServer are set through the IBM Personal Communications software.*

Network Name Textbox

Network Name: [ ]

Values: **<see text>**

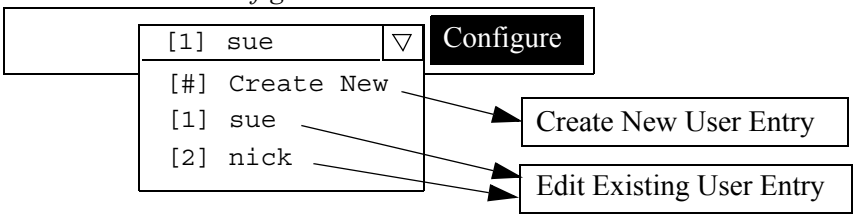
Default: **APPN**

This textbox contains the name of the SNA network to which the host and the CommServer are connected.

The network name is a maximum of eight alphanumeric ASCII characters, beginning with a letter. If less than eight characters, it is padded to eight characters with spaces at the right.

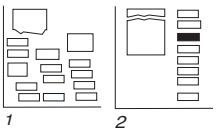
C.2.9 System Configuration: The Users Screens

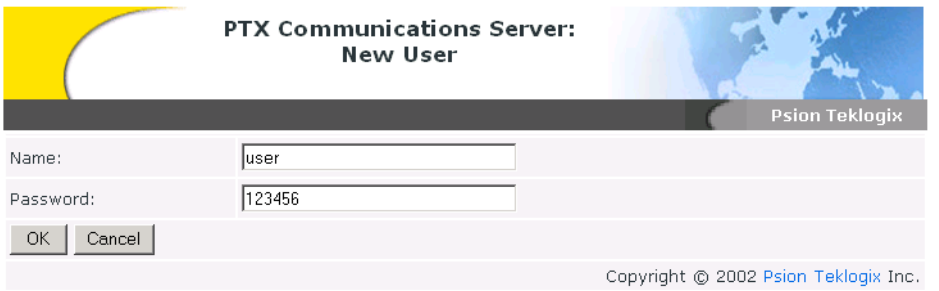
Users listbox on *Configuration Main Menu*:



The user administration screens of the CommServer are accessible from the *Users* listbox and selection button.

C.2.9.1 Create New User Entry





In this screen, the user can set options for a new user.

Name Textbox

Name:

Values: **<see text>**

Default: **<none>**

This textbox allows the entry of a name for the user. The name must be an ASCII string.

Password Textbox

Password:

Values: **<see text>**

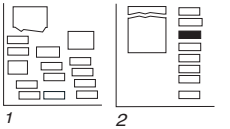
Default: **<none>**

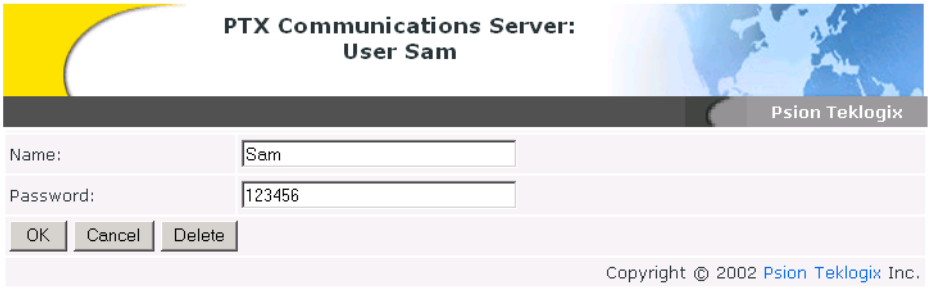
This textbox allows the entry of a password for this user. The password must be an ASCII string, and may be up to 32 characters long.

This password is case-sensitive: the CommServer recognizes differences in case when checking it. The password *EXAMPLE* is considered to be different than passwords *example* or *EXamPLe*.

Note: *The password is displayed in cleartext on this screen.*

C.2.9.2 Edit Existing User Entry





In this screen, the user can set options for an existing user.

Name Textbox

Name:

Values: **<see text>**

Default: **<none>**

This textbox allows the entry of a new name for this existing user. The name must be an ASCII string, and may be up to 32 characters long. This name is not case-sensitive.

Password Textbox

Password:

Values: **<see text>**

Default: **<none>**

This textbox allows the entry of a new password for this existing user. The password must be an ASCII string, and may be up to 32 characters long.

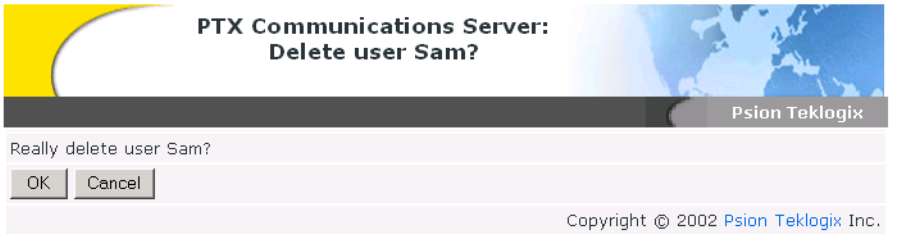
This password is case-sensitive: the CommServer recognizes differences in case when checking it. The password *EXAMPLE* is considered to be different than passwords *example* or *EXamPLe*.

Note: *The password is displayed in cleartext on this screen.*

Delete Button

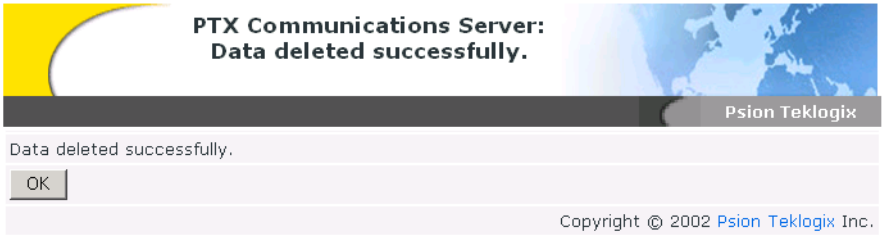
Delete

The *Delete* button allows the user to delete the currently-displayed user from the list of users. When it is pressed, the CommServer displays a confirmation screen:



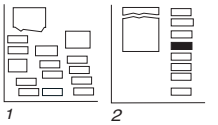
If the user presses the *Cancel* button on this screen, the CommServer displays the *Edit Existing User Entry* screen again.

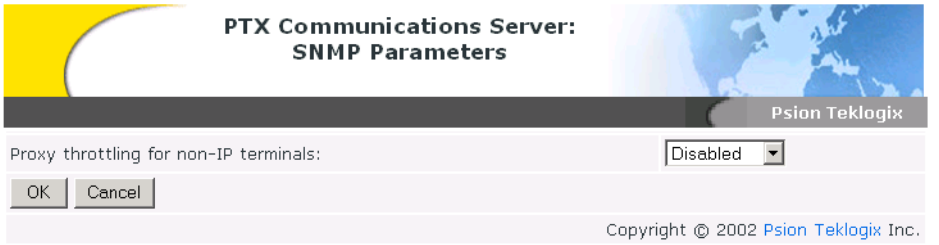
If the user presses the *OK* button on this screen, the CommServer removes the user's data from the configuration cache and displays a confirmation screen:



When the user presses the *OK* button in this confirmation screen, the CommServer displays the *Configuration Main Menu* again. The choice for the deleted user entry is no longer present in the *Users* listbox.

C.2.10 System Configuration: SNMP Parameters





In this screen, the user can set an option for the CommServer's SNMP operation. Most of the SNMP options in the CommServer are set through the operating-system software.

Proxy Throttling For Non-IP Terminals Listbox

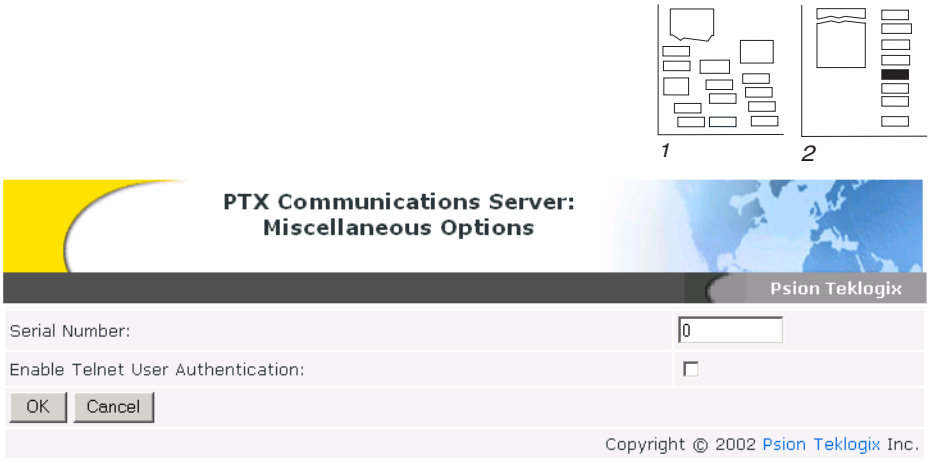
Proxt throttling for non-IP terminals: ▽

Values: **`disabled, 500b/s, 1000b/s, 1500 b/s`**

Default: **`disabled`**

This textbox allows the user to enable 'throttling' for SNMP queries and responses crossing Psion-Teklogix-proprietary radio networks. Since these networks often use narrowband FM transmissions, their maximum data rates may not be as high as those of 802.11 networks. Some SNMP queries may result in large amounts of data crossing the RF networks; the Proxy Throttling parameter limits the rate at which such data may be sent, to prevent saturation of the RF network.

C.2.11 System Configuration: Miscellaneous System Options



In this screen, the user can set miscellaneous system options for the CommServer.

Serial Number Textbox

Serial Number:

Values: **<see text>**

Default: **0**

This textbox allows the user to enter a serial number for this CommServer.

Enable Telnet Authorization Checkbox

Enable Telnet Authorization: ☐

Values: **<enabled>, <disabled>**

Default: **<disabled>**

When this parameter is enabled, the CommServer requests a username and password from telnet sessions connecting to the network console.

When a session connects, the CommServer requests a username:

```
>User:
```

After the user enters a username, the CommServer requests a password:

```
>User: sue
>Password:
>
```

After the user enters the correct password, the CommServer displays the network-console prompt:

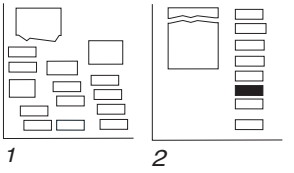
```
>User: sue
>Password: ********
>User Logged In
>
```

If the user does not enter a correct username and password, the CommServer displays the message **Unknown Name or Password** and requests another username.

The user names and passwords are those listed in the *Users* listbox in the CommServer's *Main Configuration Screen* and set in the *Create New User* and *Edit Existing User* screens. They are the same ones used to log into the CommServer's web interface.

C.2.12 Miscellaneous Commands

C.2.12.1 Display Entire Database Contents



PTX Communications Server:
Database Validation Results

Psion Teklogix

Database Key	Type	Value
cell802.autostartup	Bool	False
cell802.beaconperiod	Uint	2
cell802.initialrtt	Uint	1000
cell802.protocol	Uint	2457
cell802.timeout	Uint	5
httpd.enabled	Bool	True
radiolinkfeatures.cellular	Bool	True
radiolinkfeatures.firstautotaddr	Uint	1024
radiolinkfeatures.[illegible]	Enum	Disab.
protocols.tcpip.snmp.usesnmpd	Bool	True
rrmg.1.snmp.rowstatus	Vlist	1
system.rpc.snmp.port	Uint	9555
protocols.tcpip.hosttable.timeout.length	Uint	600
protocols.tcpip.hosttable.timeout.type	Enum	Are Not Cached
rrmg.1.rrm.1.configured	Bool	True
rrmg.1.rrm.1.name	ASCII	Sport

OK

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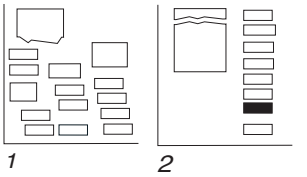
In this screen, the CommServer displays the contents of its configuration database. This is the permanent database with which the CommServer booted. Changes made to the configuration database are stored in a *configuration cache*, which must be saved before the CommServer can use the changes. Not all of the screen is shown here.

C.2.12.2 Restart The CommServer Software

When the user presses the *Restart* button, the CommServer displays the *Restart Controller Software* screen:



OK Button

OK

When the user presses the OK button, the CommServer displays the *Restarting Confirmation* screen and then restarts the Psion Teklogix software inside the CommServer. This restart is not an operating-system reboot.

The Restarting Confirmation Screen

The CommServer sends this screen to the browser, then restarts the Psion Teklogix Communications Server software. Restarting takes approximately 5 minutes.

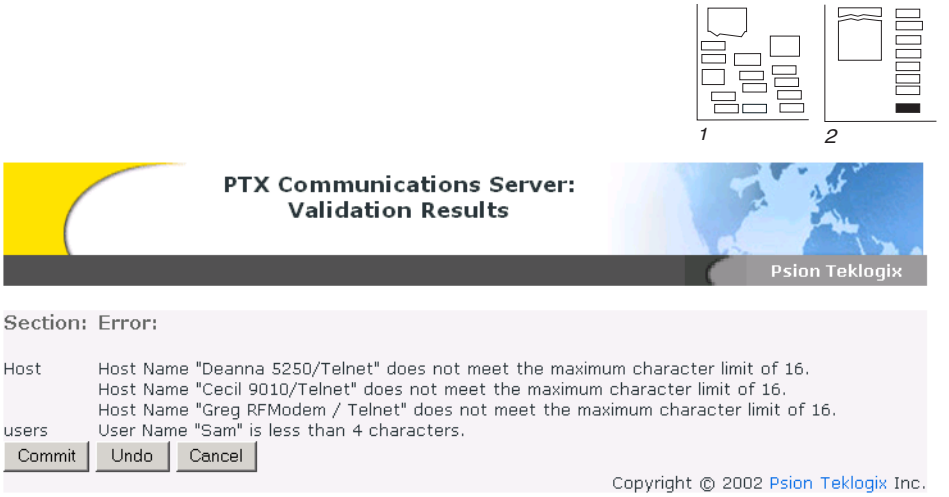
OK Button

OK

After the CommServer has rebooted, pressing the OK button in this screen causes the CommServer to display the *Main Configuration Screen*.

C.2.12.3 Validate and Save Database Contents

When the *Validate* button in the *Configuration Main Menu* is pressed, the CommServer checks the configuration database cache for errors, then displays the *Database Validation Results* screen:


1
2
PTX Communications Server:
Validation Results
Psion Teklogix
Section: Error:
Host Host Name "Deanna 5250/Telnet" does not meet the maximum character limit of 16.
Host Name "Cecil 9010/Telnet" does not meet the maximum character limit of 16.
Host Name "Greg RFModem / Telnet" does not meet the maximum character limit of 16.
users User Name "Sam" is less than 4 characters.
Commit
Undo
Cancel
Copyright © 2002 Psion Teklogix Inc.

Any errors in the configuration are displayed in this screen.

Commit Button

Commit

When the user presses the *Commit* button, the CommServer writes the validated contents of its configuration cache to the permanent configuration store.

Note: *Once a configuration has been committed, the CommServer's internal software must be updated before the CommServer will run with the new configuration. To update the software,press the Restart button on the Main Screen.*

Undo Button

Undo

When the user presses the *Undo* button, the CommServer restores the last committed version of its configuration.

Warning: ***All changes made to the configuration of the CommServer since the last configuration was committed are lost.***

Cancel Button

OK

When the user presses the *Cancel* button, the CommServer displays the *Configuration Main Menu*. Changes remain in the temporary configuration cache.

APPENDIX D

DEVELOPING HTML FOR THE COMMSERVER

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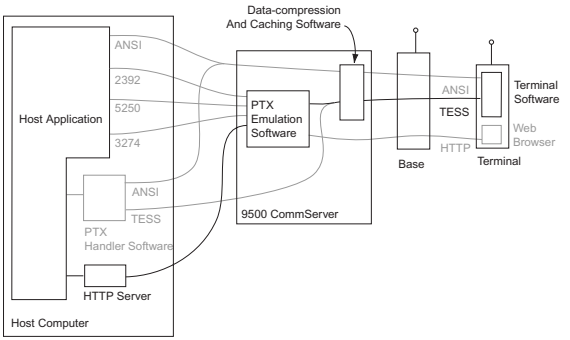
D.1 Limitations Of The CommServer's HTML/TESS Emulation

The CommServer can translate HTTP datastreams and the web pages they transport into TESS for display on Psion Teklogix terminals.



This emulation can handle HTTP datastreams with the following limitations:

- Graphics, fonts, and stylesheets are not supported.
- Frames are not supported.
- Some HTML tags are not supported (`<LAYER>`, `<MAP>`, etc.).
- Paragraph alignment is not supported.
- HTML pages may not exceed the height of the terminal screen. The emulator attempts to display such screens, but only the first part of the page is displayed. There is no way to scroll to other parts of the page.
- The emulator uses HTTP 1.0.
- Only `http://` and `file://` access protocols (schemes) are supported.
- Only unencrypted connections are supported.
- User authentication is not supported.
- MIME types sent by the web server are not used.
- Drop-down list boxes, radio buttons, and checkboxes are not supported.
- Advanced features of Web servers (like redirection) are not supported.

D.2 Supported HTML Tags

The Psion Teklogix HTML emulator accepts the tags described in Section D.2.1 to Section D.2.4 and uses them to display text. Other tags are *unsupported* or *ignored*.

Unsupported Tags

Tags not mentioned in these tables are *unsupported* by the emulator. When the emulator encounters an unsupported tag, it removes the tag and its corresponding end-tag from the TESS datastream sent to the terminal, but does not remove any text surrounded by the tags.

Thus, HTML source text containing the unsupported tag `<UNKNOWN>`, such as:

```
text, <UNKNOWN>more text,</UNKNOWN> still more text
```

would be rendered on the terminal as:

```
text, more text, still more text
```

Ignored Tags

The CommServer's HTML emulator *ignores* two tags, `<SCRIPT>` and `<STYLE>`. When it encounters one of these tags, it removes the tag and its associated end-tag from the TESS datastream sent to the terminal, and it also removes the text (and any other tags) surrounded by the `<SCRIPT>` and `<STYLE>` tags.

Thus, HTML source text containing the ignored tag `<SCRIPT>`, such as:

```
text, <SCRIPT>more text,</SCRIPT> still more text
```

would be rendered by TekHTML on the terminal as

```
text, still more text
```

In this way, TekHTML prevents the text of embedded Javascript and stylesheet information from being passed to the terminals and displayed on their screens.

D.2.1 Link, Miscellaneous, And Input Tags

Tag	Meaning	Support	Tag-Specific Information
<HEAD>	Information about page	Terminal and console; limited support	This tag is recognized, but no tag attributes are supported. All tags between <HEAD> and </HEAD> except <TITLE> are ignored
<TITLE>	Title of page	Terminal and console; limited support	The title is printed at the top of the screen.
<BODY>	Content of page	Limited support	No attributes of the <BODY> tag are recognized. TekHTML for Windows NT does not recognize Psion Teklogix' PASSTHRU, PASSTHRUPORT, PASSTHRUESC, and PASSTHRUNEXTPAGE attributes, which are used by the HTML emulation in Psion Teklogix' network controllers.
<TEKLOGIX>	Information about output fields	Full support	This tag is Psion Teklogix-specific. It has one attribute, TEKFLAGS, and is used for marking text to be treated as TESS output fields.

<A>	Anchor	Terminal and console; limited support	Recognizes the HREF attribute for hyperlinks. All other attributes, including NAME, are ignored.
<INPUT>	Input fields	Terminal and console; limited support	Fully supported input types: HIDDEN, PASSWORD, SUBMIT, TEXT. Limited support: RESET. A button with the RESET attribute does nothing when pressed. The RADIO, and CHECKBOX input types are displayed; there is no support for entry. Attributes supported: ACCESSKEY, FKEYONENTER, FKEY, HREF, NAME, SIZE, TEKFLAGS, TYPE, VALUE.
<FORM>	Input forms	Terminal and console; limited support	Attributes supported: ACTION and METHOD.
<IMG>	Image	Terminal and console; limited support	The image is not printed; it is replaced with the text of the ALT attribute. If there is no ALT attribute, the image is replaced with the text [IMG].

D.2.2 Text Attribute Tags

Tag	Meaning	Support	Tag-Specific Information
<BLINK>	Blink	Terminal and console	This tag is mapped to the TESS *blinking* attribute.
<B>	Bold	Terminal and console	This tag is mapped to the TESS *bold* attribute.
<STRONG>	"Strong" text	Console only	There is no support in TESS for this tag. Text using it is rendered in a different colour on the Windows console.
<U>	Underline	Terminal and console	This tag is mapped to the TESS *underline* attribute.
<S>, <STRIKE>	Strikeout (Place lines through text)	Console only	There is no support in TESS for this tag. Text using it is rendered in a different colour on the Windows console.
<H1>, <H2>, <H3>, <H4>, <H5>, <H6>	Heading	Terminal and console; limited support	These tags are treated as paragraph markers <P> because there is no support for fonts in TESS.

D.2.3 Text Formatting Tags

Tag	Meaning	Support	Tag-Specific Information
<PLAINTEXT>, <PRE>	Place text exactly as presented, including whitespace	Terminal, console	
<XMP>	Example	Terminal, console	
 	Line break	Terminal, console	
<P>	Paragraph break	Terminal, console	Due to space restrictions, paragraph spacing is minimal.
<DIV>	Division	Terminal, console; limited support	Acts like <P>
<HR>	Horizontal rule	Terminal and console; limited support	Draws a line of dash characters - across the screen; no justification support

D.2.4 Table, List and Definition Tags

Tag	Meaning	Support	Tag-Specific Information
<OL>, <UL>, <LI>, <DIR>	Ordered list, unordered list, list item, directory	Limited support	List entries are indented properly. Ordered and unordered lists are rendered with asterisk characters * as bullets.
<TABLE>, <TR>, <TD>, <TH>	Table, table row, table data, table heading	Limited support	Variable-width tables are supported. The column WIDTH attribute may take a value expressed in pixels or as a percentage of total table width.
<DL>, <DT>, <DD>	Definition list, definition title, definition data	Limited support	No indentation.

Notes:

1. *Not all visual attributes are rendered on character-mode terminals. Some attributes are mapped into terminal's attributes (for instance, "strong" to "blink"); other are not used. However all these video attributes are recorded during the page rendering.*

2. *The named-anchor tag* `<A NAME=xxx>` *and the corresponding use of the* `#` *character in the reference tag* `<A HREF=#xxx>` *are not supported.*

3. *Text marked with the* `<PRE>` *tag wraps to the next line if it exceeds the width of the page.*

4. *It is possible to specify column widths in the* `<TH>` *and* `<TD>` *tags with the* `WIDTH` *attribute:* `<TD WIDTH=25%>` *or* `<TD WIDTH=200>`.

   If a percentage value is given, TekHTML assumes that the value is meant as a percentage of the available space for the table on the screen.

   If a numeric value is given, TekHTML assumes that the value is a width in pixels. It divides the value by the configured number of pixels per character value, and uses the result as a column width.

   Values less than zero are ignored. Totals (of pixels or of percentages) greater than the table width are reduced to make the results fit the space available.

   Mixing cells with and without width specifications is possible. The results may look unusual depending on the amount of data in the cells without a width specification.

D.3 Function Keys

D.3.1 Mapping The Function Keys

Psion Teklogix terminals have function keys labeled “F1”, “F2” etc. These keys may be linked (or “mapped”) to the anchor tag <A> and the input tag <INPUT> within HTML pages.

When pages using these mappings are accepted by TekHTML and rendered on a Psion Teklogix terminal’s screen, the user can press the function key referenced by a link or control. The terminal then performs the appropriate action, requesting a web page or submitting a form. Mapping is done on a per-link basis, and different links can use different mappings. There is no global (application-wide) mapping.

The FKEY attribute within a link tag specifies the number of the function key to be used. Currently only the <A> and <INPUT> tags may contain the FKEY attribute. The FKEY attribute may also be expressed as ACCESSKEY. These two names may be used interchangeably.

D.3.1.1 Mapping A Function Key To A Hyperlink

Use the following syntax:

```
<A HREF=<URL> FKEY=n>
```

where <URL> is the desired URL and n is the number (from 1 to 30) of the desired key. For example, the following link invokes a hyperlink to the web address http://www.teklogix.com/ when the terminal user presses the <F8> key:

```
<A HREF=http://www.teklogix.com FKEY=8>
```

D.3.1.2 Mapping A Function Key To A Button

Use the following syntax:

```
<INPUT TYPE=SUBMIT NAME=<BUTTON NAME> VALUE=<BUTTON VALUE>
FKEY=n>
```

where n is the number (from 1 to 30) of the desired function key. The following input tag submits the form to the HTTP server when the terminal user presses the <F8> key:

```
<INPUT TYPE=SUBMIT NAME=OK-BUTTON VALUE=OK FKEY=8>
```

D.3.2 Tags Without Function-Key Support

The `FKEY` attribute may not be used within certain anchor `<A>` and input `<INPUT>` tags.

The `FKEY` attribute may not be used within the named-anchor tag `<A NAME=somename>` because the named-anchor tag does not specify a link. It may not be used within certain `<INPUT>` tags as well—some because of their nature, such as `<INPUT TYPE=HIDDEN>`, others because of limitations of the emulator, such as `<INPUT TYPE=CHECKBOX>`.

The emulator prints a message to the debug console or file if such invalid tags are encountered. The incorrect function-key event is ignored.

D.3.3 Predefined Function Keys

Certain function keys are predefined; their action can not be altered. They are given in Table D.1. Additional values for these keys may be specified when starting TekHTML using the given configuration commands.

If a programmable function key with the same number is defined in the HTML page (using the `ACCESSKEY` or `FKEY` attribute), the action of the predefined function key prevails.

Default Function Key	Action	Configuration Command
F1	Go to start page (show the configured home page)	`-fh`***n*** (where ***n*** is the number of the desired function key)
F2	Go back (show the previous page)	`-fb`***n***
F3	Go forward (show the next page)	`-ff`***n***
F30	Reset	`-fr`***n***

Table D.1 Function Key Actions And Configuration Commands

D.3.4 Remapping Function-Key Zero (F0)

During operation, the <ENTER> key of the terminal should not be pressed when the cursor is in an entry field. This is because the HTML emulator (browser) does not know which form-submitting tags `<INPUT TYPE=SUBMIT ...>` to use.

The terminal's <ENTER> key is usually programmed to act as, or be *mapped* to, function-key zero (F0). While there is no actual F0 key to press on a Psion Teklogix terminal, several events can mimic the press of the key. The data corresponding to an F0 keypress can be artificially created using the <ENTER> key or a scanner. These mappings are done in the TESS parameter menu in each RF terminal.

If the <ENTER> key is mapped to function-key zero (F0) in the terminal's TESS-FIELDS menu ("Enter to F0" = "Y"), then pressing the <ENTER> key on the terminal's keyboard causes an F0 keypress to occur. The terminal submits the form, sending the form data back to the host. Otherwise, pressing the <ENTER> key simply moves the cursor to the next field on the screen, sending nothing.

By default, the <ENTER> key is mapped to the F0 key.

A similar mapping exists for scanners. In a Psion Teklogix terminal, the TESS-WAND menu has two settings: "Append Enter" and "Append F0".

If neither of these is enabled, scanner data is entered into the current field after a scan, and the cursor stays where it happens to be (depending on data size and other settings). If "Append Enter" is selected, the terminal acts as if the <ENTER> key had been pressed, and the cursor moves to the next field. If "Append F0" is selected, the terminal acts as if the F0 key had been pressed after the data was entered, and submits the form data.

The F0 keypress event, like that from any other function key, causes the terminal to send a TESS page to the CommServer, which is translated and sent to the host.

It is possible, however, to remap the F0 key to act as any other function key, using the `FKEYONENTER` attribute. This remapping is on a per-field basis; the key can thus be assigned to any button.

The syntax of the remapping is:

```
<INPUT TYPE=TEXT FKEYONENTER=n ...>
```

where `n` is the number of the function key to be invoked when the <ENTER> key is pressed in this field.

D.4 HTML Extensions For TESS

TekHTML uses TESS to communicate with the terminal, and TESS has many useful features that are not accessible using standard HTML.

These features are accessible through the Psion Teklogix-specific attribute `TEKFLAGS`. This attribute is specified within the standard HTML `<INPUT>` tag, for input fields, or within a Psion Teklogix-specific `<TEKLOGIX>` tag, for output fields.

D.4.1 TEKFLAGS Within The <INPUT> Tag

The syntax of the TEKFLAGS attribute within the `<INPUT>` tag is as follows:

```
<INPUT TYPE=TEXT TEKFLAGS=xxx ...>
```

where `xxx` is a string of one-character flags.

This tag specifies buttons or text fields, which are translated by TekHTML to TESS input fields. Checkboxes and radio-buttons are displayed by TekHTML, but do not work. There is no closing tag for the `<INPUT>` tag.

D.4.2 TEKFLAGS Within The <TEKLOGIX> Tag

The syntax of the TEKFLAGS attribute within the `<TEKLOGIX>` tag is as follows:

```
<TEKLOGIX TEKFLAGS=xxx> text </TEKLOGIX>
```

where `xxx` is a string of one-character flags.

This tag specifies text which will be treated as a TESS “output” field when it is translated into a TESS datastream by TekHTML and passed to the terminal. Only the TEKFLAGS attributes `S` and `I` may be used with the `<TEKLOGIX>` tag.

The `<TEKLOGIX>` tag has a closing tag `</TEKLOGIX>`.

D.4.3 The Flags For The TEKFLAGS Attribute

The flags are given in Table D.2:

Flag	Meaning
A	AUTOTAB: Move the cursor to the next field when this one is filled.
B	BARCODE: Allow data input from scanner only.
C	CURSOR: Place the cursor in this field when the page is first displayed.
I	INVISIBLE: Do not display this field. This attribute may be used to hide buttons and text and leave only the input fields accessible. This flag may be used within both the <INPUT> tag and the <TEKLOGIX> tag.
N	NUMBER: Accept only numeric data in this field.
R	RIGHT-JUSTIFY: Place text against right-hand side of field.
S	SERIAL: Send and receive data through the terminal's serial I/O port. When used within the <INPUT> tag, this flag makes the specified text input field a TESS serial input field. When used within the <TEKLOGIX> tag, this flag makes the specified text a TESS serial output field. See the TESS manual for details.
X	TRANSMIT-UPON-ENTRY: Generate an "F0 event" when data is entered in this field.

Table D.2 Flags For The TEKFLAGS Attribute

The INVISIBLE flag I can be used to hide buttons from the user if the user is supposed to press function-keys to perform certain actions. The button (defined with the <INPUT> tag) is still required to define the action; it also defines the function key to be associated with this action. However, with addition of the TEKFLAGS=I attribute, the button itself becomes invisible, and therefore inaccessible, in the TESS screen presented to the terminal.

This can also be used to prevent scanner data input into button fields. TESS does not have "protected" fields; the BARCODE flag (the B flag) can protect button fields from keyboard data entry, but this doesn't protect against scanner data entry.

The TRANSMIT-UPON-ENTRY flag `T` can be assigned to the last entry field in a form. Then, with an appropriate `FKEYONENTER` attribute, an F0 keypress event (either the <ENTER> key or scanner data) can initiate transmission of the form without any additional actions from the user.

D.5 Debugging And Testing With TekHTML

The TekHTML emulator may be started with a number of *debug options*, which cause it to create messages of various types as it operates. The messages are such things as error messages or status messages describing TekHTML's operation. This *debug output* from the TekHTML emulator may be sent to a file, or to the console screen.

To configure the emulator to send this debug output to a *file*, start it with the option `-DF`. It then logs debug output messages to the file `filedebu.log`. This file is located in the install directory of the TekHTML program. It is overwritten every time the emulator is restarted.

To configure the emulator to send this debug output to the *screen*, start it with the option `-dC`. All debug messages are then printed to the DOS window. This option is only useful when TekHTML is not running as a Windows NT service.

The emulator has a variety of debugging options available, listed below, which enable the creation of debug messages for various actions. They can be enabled singly, or in combination.

There are two types of debug messages. *Emulator* debug messages relate to TekHTML's parsing and translation of HTML source text. *Scheme* debug messages relate to the operation of the connection between the emulator and the server which provides it information.

D.5.1 Emulator Debug

The TekHTML option `-d<type>` starts the logging of emulator debug messages. The `<type>` can be one or more of the following:

- `A` Show all emulator debug information. This includes all of the `B`,`C`,`D`,`E`,`F`,`L`,`M`,`O`,`P`,`R`,`S`,`T`,`U`, and `X` types.
- `B` Show table debug information. Prints out debug about the parsing and creation of tables.
- `C` Show debug information about cookie parsing and storage.

`D` Show debug information generated from the creation of the web page structure. This option generates lots of debug information.

`E` Show HTML parser debug information. This relates to the initial parsing of the web pages.

`F` Show forms debug information.

`L` Show table-layout debug information. This option generates lots of debug information.

`M` Show debug information generated by the main emulator routines ("general debug").

`O` Show debug information involving internal HTML objects (one object per tag or block of text).

`P` Show placement debug information (about placement of items on the screen). This option generates *extreme* amounts of debug information!

`R` Show debug information generated when the emulator receives a response from the web server.

`S` Show scheme-specific debug information generated by the emulator (not the scheme itself).

`T` Show TESS-specific debug information generated by the TESS-library interface.

`U` Show debug information generated when an unsupported tag is seen. Currently, not all unsupported tags generate a message.

`X` Show debug information generated by the TSX-library interface.

D.5.2 Scheme Debug

The TekHTML option `-s<type>` starts the logging of scheme debug messages. The `<type>` can be one or more of the following:

`A` Show all scheme debug information for all schemes This includes the `C`, `H`, `M`, `P`, `R`, and `T` types.

`C` Show connection-specific debug information (the connection status and information transfer status).

`H` Show host data debug information (prints host data received by the scheme).

`M` Show timestamping information from the scheme.

`P` Show protocol-specific debug information, such as HTTP encoding and decoding.

`R` Show debug information concerning the response to an HTTP request from the web-server.

`T` Show debug information generated by the execution of program threads in the scheme code.

D.5.3 Automatic Terminal Response Feature

In order to automate testing during development, the HTML emulator has an automatic response feature. This can be enabled for terminals in a specified range of terminal numbers.

If the automatic response feature is enabled, and a terminal receives a screen from the host, the emulator will immediately request another page on behalf of that terminal.

The pages are requested from URLs stored in a text file; the name of this file can be specified on the command line using the `-af<filename>` option. This file is stored in the `C:\tekhtml\` directory.

A range of terminals can be specified for autoresponse using the `-at<t1>-<t2>` option. Not all terminals need to be configured to respond automatically to requests.

The autoresponse feature is only enabled if a valid file is specified, and if a valid range of terminals is enabled for autoresponse. If the screen capture option `-av<filename>` is also enabled, TekHTML terminates after one pass through the URL list.

D.6 Cookies

The following material is provided for Web developers who want to use cookies for state tracking. It is assumed that the developer is already familiar with the basic concepts of cookies.

D.6.1 Overview Of Cookie Transfer

The cookie is always generated at the Web server. The cookie is sent to the browser as part of the server response, along with the requested page. The cookie is sent as a special header:

```
Set-Cookie: UserName="John Doe"; Version=1; Path=/cgi-bin;
                        Max-Age=120
```

Here is the formal grammar of the `Set-Cookie` header:

```
        Set-Cookie: NAME=VALUE [;Expires=dateValue]
     [;Domain=domainName] [;Path=pathName] [;Secure]
```

The web server can send more than one cookie in the response. The browser accepts all of them.

This Perl script can be a starting point for a Web developer:

```
#!/usr/local/bin/perl
$maxage = $ENV{QUERY_STRING};
$age = "Max-Age=$maxage";
$exp = "Expires=$m_exp";
$path = 'Path=/cgi-bin';
$ver = 'Version=1';
print "Set-Cookie: UserName=\"John Doe\"; $ver; $age;
   path; $exp\n";
print "Set-Cookie: UserPassword=\"Warp Speed\"; $ver;
   $age; $path\n";
print "Content-Type: text/html\n\n\n";
print "<html><body>\n";
print "Cookies have been set to expire in $maxage seconds
   or on $m_exp.\n";
print "<a href=printenv>Test this cookie
   now</a></body></html>\n";
```

This script can be called with query `?cookie-age` in seconds to alter the `Max-Age=nnn` parameter. The `Expires=` header is more complicated (see page 21) and its generation is not shown.

When the browser is going to make another request to the same (or a similar) host, it looks at available cookies and sends the appropriate cookies to the Web server. Criterion of such filtering is fully described in RFC 2109; in brief, `Path` and `Domain` attributes must match to the URL being requested.

The browser combines `NAME=VALUE` pairs from applicable cookies (if any are applicable) and sends them to the Web server in a special `Cookie:` header, as illustrated below for two cookies:

```
GET /cgi-bin/myRequest HTTP/1.0 ... Cookie:
   UserName="John Doe"; UserPassword="Warp Speed"
```

The Web server receives the `Cookie:` header and sets up an environment variable `HTTP_COOKIE:`

```
HTTP_COOKIE = UserName="John Doe";
   UserPassword="Warp Speed"
```

Now the CGI script uses this cookie.

Here is a tiny Perl script which was used to list all environment variables (HTML generation is omitted for brevity):

```
while( ($key,$value) = each %ENV )
   { print "$key=$value\n"; }
```

D.6.2 Implementation Of Cookies

There are important differences between the HTTP standard as described in RFC 2109, and the de-facto implementation of cookies in both Netscape Navigator and Microsoft Internet Explorer.

D.6.2.3 Difference In Cookie Expiration Mechanism

RFC 2109 proposes attribute `Max-Age=nnn` to define for long the browser should keep the cookie. This value is given in seconds. The value 0 requests that the browser delete the cookie immediately.

Older versions of Netscape and Internet Explorer do not understand the `Max-Age` attribute. The Web developer may be forced to use the older `Expires=` attribute, though it is much more difficult to handle.

If the Web application is designed to work only with newer browsers, this may not be a concern, and the `Max-Age=nnn` attribute should be used instead of `Expires=`.

The `Expires=` attribute has the following structure:

```
Wdy, DD-Mon-YY HH:MM:SS GMT
```

where `Wdy` is the day of the week (for example, `Mon` or `Tue`); `DD` is a two-digit representation of the day of the month; `Mon` is a three-letter abbreviation for the month (for example, `Jan` or `Feb`); `YY` is the last two digits of the year; `HH:MM:SS` are hours, minutes, and seconds, respectively. This string is not enclosed in double quotes despite the fact that it contains spaces.

A web developer can generate this data string using the following UNIX command:

```
date --utc '+%a, %d-%b-%y %T GMT'
```

TekHTML accepts day names in short and long form (`Wed` or `Wednesday`). However, all of the `Expires=` attribute is not currently processed, due to the large amount of code needed to properly convert dates. Instead, TekHTML uses a hardcoded expiration period, which is set to 1 year.

If the web developer needs cookies that actually expire, he or she should use the "new" cookie standard (with the `Max-Age=nnn` attribute).

D.6.2.4 Differences In Returned Data

Netscape and Internet Explorer return only `NAME=VALUE` pairs to the Web server. RFC 2109 specifies, however, that almost all cookie attributes are returned, prefixed with the `$` character, like this:

```
POST /acme/pickitem HTTP/1.1 Cookie: $Version="1";
Customer="WILE_E_COYOTE"; $Path="/acme" [some form data]
```

This long string is shown as being wrapped, but it is actually all on one line.

If several cookies are returned, it looks like this:

```
POST /acme/process HTTP/1.1 Cookie: $Version="1";
Customer="WILE_E_COYOTE"; $Path="/acme";
Part_Number="Rocket_Launcher_0001"; $Path="/acme";
Shipping="FedEx"; $Path="/acme" [some form data]
```

Again, this long string is wrapped.

Older Web servers ignore unknown `NAME`s (starting with the `$` character), thus providing backward compatibility. Older browsers do not send this extended cookie at all.

D.6.2.5 Differences In Punctuation

In Netscape's original proposal, the values in attribute-value pairs did not accept `"`-quoted strings. Servers should be cautious about sending values that require quotes unless they know the receiving user agent understands them (i.e., is using "new" cookies). A "new" user agent should only use quotes around values in `Cookie` headers when the cookie's version is compliant with this specification.

In Netscape's original proposal, no whitespace was permitted around the `=` that separates attribute-value pairs. Such whitespace should therefore be used with caution in new implementations.

For backward compatibility, the separator in the `Cookie` header is the semi-colon `;` everywhere. A server should also accept the comma `,` as the separator between cookie-values for future compatibility.

TekHTML accepts the `;` character as a valid separator in the `Set-Cookie` header, and generates `Cookie` requests using only `;` as a separator. Quoted strings are generated only if the value string from an incoming cookie contains spaces; and this automatically means that such a cookie came from a "new" Web server which, apparently, is willing to accept quoted cookies back.

APPENDIX E

SOFTWARE LICENSE AGREEMENTS

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E.1 For Psion Teklogix Software

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APPENDIX F

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